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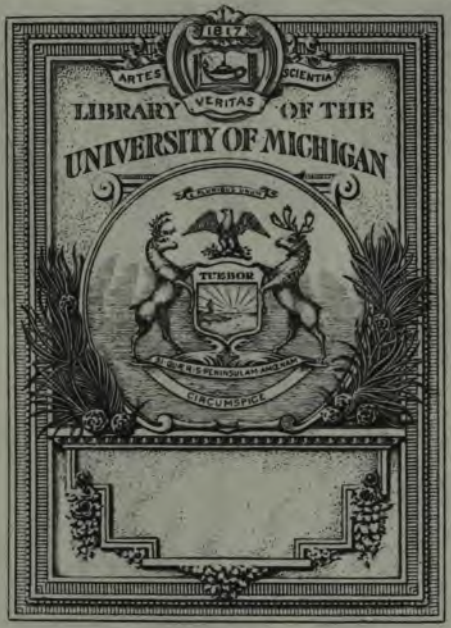
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TWO YEARS

IN

NEW SOUTH WALES;

A SERIES OF LETTERS,

COMPRISING

SKETCHES OF THE ACTUAL STATE OF SOCIETY

IN THAT COLONY;

OF ITS

PECULIAR ADVANTAGES TO EMIGRANTS;

OF ITS TOPOGRAPHY, NATURAL HISTORY, &c. &c.

BY

P. CUNNINGHAM, SURGEON, R. N.

IN TWO VOLUMES.

VOL. I.

LONDON:

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Sir
Edwards
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TO

HIS ROYAL HIGHNESS

THE DUKE OF CLARENCE,

LORD HIGH ADMIRAL OF ENGLAND;

THESE VOLUMES

ARE MOST RESPECTFULLY INSCRIBED,

In humble testimony of the unmingled pleasure felt by the Author, in common with all classes of His Majesty's Naval Service, at the high honour conferred thereon by the appointment of His Royal Highness; and of the universal confidence inspired by His Royal Highness's measures since the commencement of his official career.

PREFACE.

HAVING made four voyages to New South Wales, as surgeon-superintendant of convict-ships, I had hopes, on my arrival in England in July 1826, of obtaining a fresh appointment, and again departing before winter set in; but failing in these expectations, and being consequently detained until the ensuing spring, I commenced arranging the following letters for the press, with a view to beguile the long winter evenings.

I have resided two years, at occasional intervals, in the colony, and travelled over a considerable

portion of it, and have therefore had ample opportunities of acquiring knowledge and making observations relative both to its present and prospective state: I have come in contact with the aborigines in a variety of ways; I have enjoyed the society of the respectable and thriving inhabitants of Sydney; and I have, in my four voyages, carried out upwards of six hundred male and female convicts, without, I am proud to say, losing a single individual. I may therefore claim some acquaintance with the manners, pursuits, and modes of thinking, of the various classes resident in the colony, which I have endeavoured to represent as faithfully as the nature of the subject would admit.

To such as have resolved on forsaking the land of their birth, in order to promote their fortunes in the new countries toward which the tide of emigration now flows, the general intelligence and talent of those to whom the government of such countries has been confided, cannot be unimpor-

tant. The justice of its laws, and the wisdom displayed in their administration, have necessarily greater influence upon the prosperity of every infant state, than even the innate resources of climate and soil. The admirable system therefore pursued by the present governor of New South Wales, must be as encouraging to these purposing to emigrate as satisfactory to those already domiciliated there. I found my opinion relative to General Darling's measures almost solely upon the official orders promulgated by him in the public prints of the colony, to which every one has access; and, consequently, so far the same means of forming a judgment as myself; but it is only individuals who know how much his effective reforms *were wanted*, by whom their value can be thoroughly appreciated.

A man of mere ordinary capacity may suffice for the government of one of the West India islands, arrived as those colonies are at the period of maturity. But in New South Wales, as yet im-

mature, although destined perhaps to become the seat of a powerful empire, we require a governor possessed of ability to discern and activity to awaken its dormant energies; and although Lord Bathurst conferred many important benefits upon the colony during the period of his holding office, a greater could not have been conceded by him than the appointment of General Darling.

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LETTERS

FROM

NEW SOUTH WALES

LETTER I.

THERE is no event capable of awakening such deep-seated emotions in the human breast, as that of separating for ever from the place of our nativity, and thus rending at once asunder all those ties of affection and friendship which "grow with our growth," and close into warmer attachments as our youthful years ripen into manhood. To depart for a far and foreign land,—being destined never again to behold those familiar faces in the society of whose owners we have passed our youth-

ful happy years, nor the sacred spot endeared to us by numberless tender associations,—cannot fail to be mournful. Many fond thoughts will throng at such a moment into the mind,—too earnest and too complicated to be clothed with words! Home, country, and kindred, must ever be favourite themes to the feeling heart: how warmly then must a man gifted with such cling to their recollection —and how sad must be the consideration, on quitting them, that not only may he see them no more, but that possibly his offspring may, at some future period, be ranged in hostile array against the land of his nativity!

Under these considerations, therefore, although there were no other, the individual who thinks of emigration to a distant country, even as a means of bettering his fortune and securing a comfortable independence to his children, ought to weigh well the consequences of such a step before he decides on taking it:—but if any other views than these prompt him to desert his native land, he will almost to a certainty have frequent and bitter cause to bewail his precipitation!

The man, however, who possesses a capital of

1200*l.*, or thereabouts, which he sees little chance of improving in England, and possibly with a rising family, whom he has but slender hopes of putting in a way either to realize an independence or even to secure a respectable livelihood;—a man so situated, if he should resolve on endeavouring to brighten his prospects by emigration, will, it is my firm belief, find New South Wales the best of all the newly colonized countries he can possibly fix on, for the purpose of turning that capital, when devoted to agricultural purposes, to a beneficial account. Many are the difficulties and disappointments he will have to encounter in the outset; but by patience, perseverance, and prudence, he will gradually overcome these; feeling sensible that, while he enjoys the proud satisfaction of calling all that he sees about him his own, every improvement he makes is for his sole and individual advantage. He will see all his essential family wants administered to by the productions of his own land, without the night-mare of poor-rates, or indeed any other rates, to startle him from his slumbers or detract from the efforts of his industry. He has the still greater pleasure, likewise, of seeing those

very children who, in England, were possibly destined to lessen his wealth and diminish his comforts, here to a certainty tend manifestly to the increase of both. As soon as they ripen into youth, they constitute his most valuable assistants, since none can be so specially interested in his prosperity; while on their marrying, he has only to obtain for them a grant of land, and, furnishing them with portions from his surplus stock, to turn them forthwith into the world almost confident of success,—knowing well that no individual, possessing any original capital, can possibly fail here with a moderate proportion of common sense and perseverance to guide and urge him.

The new South American states can never be desirable as a permanent asylum to an Englishman, on account of the total diversity of language, religion, manners, and customs, together with that insecurity of property which exists now, and must for some time continue to exist. The North American states, the Canadian colonies, and the colonies of Australia and Tasmania, must therefore, inasmuch as they are completely opposed to the former in these respects, long maintain a preference among

all endowed with English feelings: personal liberty is likewise guaranteed in these countries by wise laws and the watchful superintendence of enlightened governments. Between *North* America, then, and our Australian colonies, the palm of superiority need only be contended for; and having seen something, and read and studied much, of their respective natural capabilities, I give a decided preference to New South Wales, as an eligible asylum for an agricultural emigrant.

In the American states, and the Canadas, you have to proceed seldom less than a thousand miles inland before you can obtain unlocated ground, which even then, in the States, you are obliged to purchase, while your produce has all to be transported by land and interior water carriage from one to two thousand miles, before it reaches the point of exportation. In New South Wales, on the contrary, you may have abundance of land within from fifty to a hundred and fifty miles of the coast, upon terms neither irksome nor burdensome. In America, the soil is almost uniformly covered with such dense forests, that a cart cannot pass readily through them without cutting down trees here and

there on the route; while the grass is either completely choked by the fallen leaves or so smothered by the overshadowing summer foliage, that its scantiness and sickly vegetation quite unfit it for pasture, except in the interior *prairies* and a few spots on the banks of rivers, where the soil is too wet for the growth of timber. Upon our very sea-coast, or as soon as you have traversed at farthest from twenty to forty miles, the country is generally so thinly timbered that you may drive a carriage over it in all directions; while the trees also, being but slightly clothed, and all evergreens—consequently never shedding their leaves—afford both a cool retreat for the cattle in the summer heats and a tolerable protection for the sward of native grass which every where abounds. Hence all kinds of stock may be kept here at the very *outset*—a thing quite impracticable in America.

Again;—In America, the severe winter totally precludes the field-pasturing of cattle, which must during that season be supported on hay, or the tender buds and sprouts of the forest trees, lopped off for them to browse upon. Here the winters are so mild, that native grass always sufficiently

abounds whereupon to winter all the stock you are for many years likely to possess. In America, labourers are so scarce, labour so dear, and agricultural productions so low, that the settler is necessitated to perform most of his field labour himself (or with the assistance of his family), to insure even a moderate profit for his outlay of capital. Here, labourers are plentiful; labour consequently cheap; and a handsome profit in general easily realized *in the colony* on most agricultural products. Indeed, when you consider that upwards of 100,000*l.* sterling is annually expended here by the British government in paying the expenses of the civil administration, the military, and the convicts, and this sum too distributed among a population not yet exceeding forty thousand, the advantage resulting to the agricultural emigrant must be clearly apparent. In America, again, look at the diseases which carry off yearly so many new comers, and even not a few of the native population; such as yellow fever, agues, remittent fevers, and so forth:—in New South Wales, we have neither ague, remittent fever, nor indeed *any* fever but the *rum* fever,—while measles, hooping-cough,

small-pox, and all your similar European pests, are alike strangers to our soil—the most common and fatal disease being dysentery, which is seldom productive of danger to any but the imprudent and intemperate.

To be sure, the passage to America is much cheaper; but when you come to add the expense of the *inland* journey to that of the voyage, I think the passage to this country will turn out to be fully as moderate. The land in America is certainly, generally speaking, richer, from being fattened by the manure of the deciduous leaves accumulated for centuries thereupon; but our more genial climate surely compensates this deficiency; while all the other eligibilities I have stated combine to throw the relative merits of America as a desirable abode for an English emigrant quite in the shade;—not to say, that a man who takes an honest pride in many of the institutions of his native land will feel small pleasure in transplanting himself into a country where (as in the United States) the discordant name of "*foreigner*" is perpetually jarring in his ears.

Over Van Dieman's land (or *Tasmania*, as we

love to call it here), New South Wales enjoys also many advantages. Though the climate of Tasmania is generally cooler than that of New South Wales (or *Australia* as we colonials say), yet on the extensive table lands beyond the fine pastoral county of Argyle, and at Bathurst, the climate differs little from that of Tasmania. In the latter country, the good land is now granted; so that an individual emigrating there with a rising family sees no prospect of acquiring ground for them on their attaining the age of manhood; when both policy and the course of nature prescribe for them a separate establishment. Besides, from this want of good unlocated land whereon to graze his superfluous stock, (when increased beyond the means of his farm's maintenance,) he will be forced ineligibly to kill or dispose thereof. But in Australia, boundless districts of fine grazing land lie open to the north and south of Sydney for the selection of the emigrant man with a family, whenever the government shall render them accessible by means of roads from the sea-coast; in which districts all his children may have "ample room and verge enough," and all his superfluous stock means

of pasturage.—The constant failure of crops at the English Cape settlement; the total want of a good harbour near it; the numerous savage animals existing there,—human and otherwise; these circumstances combine to render any comparison between it and Australia altogether unnecessary.

I would counsel no man encumbered with a family, however, to risk emigration to New South Wales with a capital of *less* than 1200*l.*, and even then he should proceed cautiously and economically. If Australia is better suited to the agricultural *capitalist* than America, the latter is probably more advantageous to the agricultural *labourer*. In Australia, farm labour is performed almost entirely by convicts, whose only remuneration consists of food and clothing; to which arrangement they are compelled to submit; and as their numbers are generally abundant, farm labour is kept low. But in America, labourers have and ought to have a *veto* in the question of remuneration; so that wages there cannot be thus arbitrarily kept down, but will necessarily be regulated according to the relative supply and demand. I question much, however, whether many

English labourers live better than our convict servant here, whose weekly ration consists of a sufficiency of flour to make four quartern loaves at least; of seven pounds of beef; two ounces of tea, one pound of sugar, and two ounces of tobacco, with the occasional substitution of two or three quarts of milk daily for the tea and sugar allowance. Numbers of the English working poor would doubtless be happy to bargain for such a diet; and thus their situation might in these points be bettered, by their being placed upon an equality with *convicts!* (Mechanics, nevertheless, of all descriptions, earn here liberal pay.) The wages of labour therefore being so low, and the price of farm produce comparatively so high, it must be apparent to all how profitably capital may be invested here.

Since, then, it possesses these advantages, in respect to agricultural emigration, I confidently repeat, that no other new country can possibly compete with Australia, provided only that it is so justly, wisely, and energetically governed, as to secure to every man the fruits of his own industry;

to call forth the colony's latent resources; and to keep its penal population under due restraint.

The idea of Australia being a *convict* colony has, I believe, hitherto deterred many worthy individuals from emigrating thereto, fearful of trusting their persons and property among such a dubious community; but a very short residence with us would serve to allay the fears of the most timorous on this head, and bring them to unite in opinion with the older settlers, that the transportation of convicts hither is one of the greatest benefits that could be conferred upon us, inasmuch as it affords (as has been seen) an abundant supply of cheap labour to the settler for the furthering of his agricultural operations; and to the government, also, for the purpose of opening new communications through the country for the settler's accommodation, enabling him to carry his surplus produce to market. It likewise affords a steady market for a portion of that surplus produce, by reason of the demands of the troops and convicts in government employ. Few people will be found foolish enough to manifest an eagerness for the

furtherance of objects which would prove detrimental to their private interests; and when we see *the whole* body of Australian settlers eager for the continuance of convict transportation to their shores, we may reasonably conclude that they expect to derive therefrom some considerable benefit. Notwithstanding the extent of the larcenous importations for some years back among us, no less than sixteen hundred applications for *ex*-highwaymen, burglars, pickpockets, and various other descriptions of rogues (sent out to *rusticate* here), still remained uncomplied with on the arrival of our present governor, which obliged His Excellency to break up the government clearing-gangs, in order to satiate the longings of the settlers for the valuable services of (with [illegible]) that highly useful body of men. Nothing, in fact, ever created greater dismay among us, than the announcement, some two years ago, of a project for the future disposal of convict labour in the furtherance of government works at home, and in other colonies in preference to this; while our colonial wags still occasionally delight to work upon our fears by propagating *alarming* re-

ports of the *increasing morality* of the people of Great Britain, or of the lightness of the last jail-deliveries there—reports which the visiter to England will soon find *quite* destitute of foundation. In no part of the world, either, is to be found a more respectable and intelligent community wherewith to associate than in the Australian colony; for few *except* men of intelligence and enterprise emigrate; while the wealth which never fails to crown the efforts of industry here, (when there is an adequate capital to start with,) soon enables all to cherish fully and freely the social qualities. That portion of the colony originally settled is the only one wherein party bickerings and family feuds prevail; and even amongst these, harmony is now fast establishing itself.

New South Wales has, in fact, but one drawback of a decidedly unpleasant nature, and even that is more ideal than substantial.—It must be admitted that it is the only country in the world which you are ashamed to confess the having visited. I have made several slips of this kind before strangers, and I certainly never yet gained a friend

by the disclosure; every one, through some excuse or another, endeavouring to elude *the pleasure* of my society.

If you chance to meet with an entertaining companion in a stage-coach, who has travelled much, and communicates liberally the observations and anecdotes he has gleaned, you are naturally induced to repay him in kind, and in frankness of heart burst forth perhaps in praise of the beauties of *Botany*;—when lo! the smile which played upon his face at once vanishes; he measures you over and over with a most suspicious eye; and with an anxiously inquisitive look grunts out, "What! have *you* been there, sir?" You see instantly you are committed in a disagreeable dilemma; and plainly perceive that by reason of the awkwardness of the explanation you stammer out, his *suspicions* are now converted into *certainties*. Turning therefore from the disagreeable subject, you hem, look suddenly towards the window as if you saw something worth remarking on, shrug your shoulders, and drawl forth some silly observation about—*the weather!* Your interlocutor quickly takes advantage of your eye being off him, to hitch himself gradu-

ally from you to the farthest corner of the coach; and, under pretence of fumbling after a pen-knife or tooth-pick, assures himself that all his pockets are safe,—behaving to you during the remainder of the journey with that sort of constrained civility which says plainer even than words, "I shall be right glad when I get rid of you!"

Some very awkward meetings have occasionally taken place, too, here from old friends unexpectedly recognising each other in our streets after many years of separation.—On the first near view, they blush, thrust their hands quickly into their breeches' pockets, then shuffle slowly towards each other with a confused sheepish sort of smile, and commence a conversation of affected indifference—equally irksome and unentertaining to both—their hands all the while sticking as stiffly by their sides as if grafted there by some sage Taliacotian experimentalist. In this sort of half-distant, half-friendly manner, so expressive of the suspicion each entertains of *legitimacy** being the cause of

* *Legitimacy*, a colonial term for designating the *cause* of the emigration of a certain portion of our population; i. e. having *legal* reasons for making the voyage.

the other's appearance,—they cautiously *sound* upon that delicate point; when finding that there is no "jury question" in the case, they forthwith eye each other for a moment with a look of the most serio-comic gravity, then bursting into a loud chorus of laughter, dart suddenly forward *both* hands to join in a hearty congratulatory shake, and walk merrily off arm in arm—

> To take a cup o' kindness yet
> For Auld Lang Syne.

LETTER II.

THE best period of the year for an emigrant to leave England is about the month of August, as he will then arrive in the colony time enough to obtain his grant and get his wheat in (if obtaining land sufficiently clear) before the end of May in the ensuing year, which is a great point gained, as the early feeding of your labourers from the proceeds of your farm is a most essential thing to aim at;—but failing this, the emigrant has still two chances for potatoe-crops in the ensuing year, and the chance likewise of maize-planting during the October and November thereof, which will assist in dieting the farming men until wheat-time again comes round. About eighteen weeks is the average passage from England to Sydney, if the ship proceeds direct—the distance by ship's course being about

sixteen thousand miles. Many vessels touch however at the Canaries, the Cape Verds, Cape of Good Hope, or Brazils, to replenish their stock and their water, which both a numerous body of passengers and the consumption of water by the live stock tend soon to exhaust. The Englishman who for the first time has beheld a foreign country will soon be satisfied that any one of these places before-mentioned depends rather for its productiveness upon its genial climate than upon the fertility of the soil; and will be apt to exclaim, with reference to the beauty of the prospects and richness of the land, "There is no place like home!"

When proceeding out on so long a voyage, a firm resolution should be taken to put up with many little annoyances before venturing to the extremity of a quarrel; as an inconsiderate action or a few hasty words may tend not only to embitter your own quiet of mind, but lead the company generally into angry disputes during the passage. It is therefore not only an act of *mercy* to yourself, but of *justice* to them, to guard equally against giving and taking offence,—so that the harmony of the mess may not be broken up, on a voyage

which especially requires the good humour of all parties to enliven its long and dreary monotony. But certainly, from the litigiousness of some, and the ridiculous fantastical airs of others, the much-to-be-pitied captain has often a worse ordeal than a popish purgatory to pass through before the voyage is half completed. The most ticklish point of management is usually that of portioning out his attentions so equally among the sister-Eve part of his charge, that jealousy and envy may have no crevice to creep in at.—One of the most terrible feuds ever known to have taken place on an occasion of this kind,—which split the passengers into two bitter divisions during the voyage, and brought down a Philistine host of prosecutions and persecutions upon the head of the unlucky captain on his arrival in the colony,—originated simply in the carving of a batter-pudding!—Being a man more deeply versed in the mysteries of reef-knots and double and single bowlines than in rules of etiquette and points of precedence, he dreamt not of the heinous offence he was committing in helping two comely dames near him some two days running to the first spoonful of the dish,—until the simultaneous and

indignant retreat of all the other offended fair announced to him the never-to-be-forgiven crime he had just been guilty of! A rich harvest to the Sydney lawyers, and a richer treat to the Sydney wits, resulted from this "pudding fray," which bids fair to live long in our colloquial colonial annals.

On approaching the coast of New Holland, vessels always proceed direct through Bass Straits to Sydney, if the wind permit; but should it remain steadily contrary, they run round Van Dieman's Land, which is two days' sail about. Cape Otway, on the Australian continent, to the left of the Straits, and King's Island, towards Van Dieman's Land, to the right, are the points usually first attempted to be made. Upon the southern coast of Australia, to the west of Cape Otway, lies Kangaroo Island, (so named by Captain Flinden, on account of the number of those animals seen there,) where vessels from Sydney occasionally load with salt, which is formed naturally by the evaporation of the sea-water upon its sandy shores.

Here a small colony of runaway convicts, some years ago, took up their residence, and still obtain

a precarious livelihood from the kangaroos, seals, and shell-fish, wherewith the island abounds; deriving occasionally a few European necessaries by bartering the skins they procure with the vessels that call, and by assisting to collect their cargoes.

A few years back the charterers of a small vessel bound thither from Sydney decoyed two young women of that town on board, in the view of exchanging them with these Robinson Crusoes for the commodities they had to dispose of; but the wreck of the vessel in Bass Straits frustrated all the prospects of founding an independent white colony in that quarter—at least for some years to come. Many of the islands in Bass Straits also serve for an asylum to the convict runaways who, in conjunction with voluntary refugees from Van Dieman's Land, collect seal-skins and seal-oil, which they sell to the small vessels that traffic with them, and the crews whereof generally entice these wretched creatures on board, and keep them in a state of intoxication until all the fruits of their labours are extracted at any price their detainers choose to fix. Many belonging to this class of beings will submit to live in a state of the most abject wretch-

edness *in the enjoyment of liberty*, rather than feast upon sumptuous fare to which the bare name of work or control is attached. Accustomed to a life of wild irregularity, their minds can never be entirely subdued into contentment with a state wherein their bodily capabilities are urged into action, or their wills constrained.

If wind and weather prove favourable, the ship usually steers so close to land in passing through the Straits, that you will be gratified with a distinct view of the scenery of that country towards which all your thoughts had been for so many weary months directed. The shore is bold and picturesque; and the country behind, gradually rising higher and higher into swelling hills, of no great elevation, to the utmost distance the eye can reach, is covered with wide-branching, evergreen forest trees and close brushwood,—exhibiting a prospect of never-failing verdure, although sadly deficient in that fresh and varied hue displayed by our own luxuriant summer foliage in England. Grey glimmering rocks, in solitary masses, or piled confusedly together, project here and there among these endless forests; while

some gigantic, aged tree—scorched dead by the summer fires—uplifting at intervals its blasted branches above the green saplings around it, throws a sort of melancholy gloom over the verdant scenery, from the picture of dissolution presented by its black and decaying remains.

On contemplating the South American map, the immense rivers of the Orinoco, the Amazons, and La Plata, are seen ramifying to within a short distance of the Pacific; at which points, encountering the great chain of the Andes, it will be evident that the waters, in their farther course, must be turned in a different direction. This chain running nearly parallel with the Pacific Ocean, bounds in between it and the latter, the narrow stripes of land constituting the republics of Chile and Peru; and from this peculiar geographical position it obviously results that the rivers which water those countries can be little better than mere mountain torrents from the Andes, which separate the eastern from the western waters, and verge so close to the Pacific (on which those countries border), as not to admit of any rivers originating therein ever flowing a sufficient distance to collect

water enough to make them worthy of note. Somewhat similar, also, is the geographical formation of the Australian continent. On the southern, eastern, and northern coasts, according to the examinations hitherto made, but few rivers are found to exist, and these few of such inferior magnitude, as plainly to demonstrate their sources to be at no great distance from the coast. We find, in fact, in all the eastern part of New Holland, a chain of mountains extending nearly parallel with the coast, at a distance of from fifty to a hundred miles inland, forming the summit of elevation which determines the course the rivers on each side of it must pursue; those to the eastward thus disemboguing their waters in that direction, and those to the westward tending westerly. The land lying between this mountain-chain and the sea is consequently but a narrow stripe, like the similarly-situated territories of Chile and Peru; and the rivers, when running direct to the sea, like those too of the above countries, but mere mountain torrents. There is every reason likewise to suppose, from the information already gleaned, that both the southern and northern coasts, and a con-

siderable part of the western, partake of this formation, and that no rivers will be found in those directions either, having their sources at a greater distance than from sixty to a hundred miles from the sea-coast. Those even which exist to the eastward, we often perceive, do not run directly toward the sea, but in an oblique direction, or even occasionally, for some distance, *parallel* to it,—thus increasing the volume of their waters before disemboguing, by the various lateral mountain-streams which they receive in their circuitous route. Such is the history of the Hawkesbury, which, rising in the county of Argyle, to the southward of Sydney, about sixty miles from the sea, instead of passing on directly eastward *to* it, runs northerly for the distance of one hundred and forty miles, somewhat parallel to the sea-coast, through the old colonized counties of Camden and Cumberland, skirting the Blue mountains about thirty-six miles interiorly and westerly from Sydney, and finally joining the ocean to the northward thereof. In Argyle, it is named the Wolondilly; in Camden, the Warragamba; in Cumberland, the Nepean; and eventually it takes the appellation

of Hawkesbury. (This diversity of nomenclature arose from its being discovered and named by different people, at different places, without its being known to be actually the same river.) It is augmented in its course by various small streams from the eastward and westward, in Argyle; and in Cumberland by Cox's and Grose's rivers, and by the first and second branches issuing from the mountain north-westerly, as well as by the Cow-pasture river, and south and east creeks from the south-easterly quarter; the George river collecting chiefly all the waters to the eastward between the Hawkesbury and the sea, and discharging them into Botany Bay.

If the Hawkesbury had taken a direct course to the sea, it never could have been a river of any consideration, *from the short distance it would have run;* whereas, by taking a bend round the old settled part of the colony, and forming thus its western and northern boundary, it becomes augmented by all the mountain streams in its route which descend at right angles to join it, and forms a river navigable for coasters as far as Windsor, and for loaded boats a good way beyond.

In fact, it is obviously impossible that any river of magnitude can exist on the seaward side of this dividing range (which appears nearly to surround our continent), without following a similar course.

But the question regarding the termination of all those rivers which take their rise in the *interior* of this extensive barrier range, is a problem yet to be solved, and one which deserves the most serious consideration of the government. That they have an outlet *somewhere*, is evident from the very sudden fall of the Macquarie's inundation, observed by Mr. Oxley, where that river merged in the extensive interior marshes, and from the rapidity of the current even after he lost the channel among the reeds there. That, also, there can be no very extensive interior sea, may be argued from the fact that no rain clouds are ever seen coming from that quarter. It is more than probable that these marshes communicate with the Alligator rivers, discovered by Captain King, which fall into Van Dieman's Gulf, opposite to Melville and Bathurst islands, on the north-west coast, to which direction the current of the marshes tends. The

distance from the junction of the Macquarie with the marshes to this point is about eighteen hundred miles, while Mr. Oxley calculated the height of the river at that junction to be two hundred feet above the sea,—giving thus four inches per league of descent to the sea, which is equal to that of the Nile from Cairo to Rosetta. This calculation of two hundred feet, however, is mere guess-work, as no barometrical measurement was made; but it is evident that rivers taking their rise from great altitudes, will have the water in the portions of their channel below (where there is but trifling descent) impelled onwards with greater rapidity than the portions of those rivers (having the same descent as the former in their channels towards the sea) which derive their origin from a less elevated source; inasmuch as, the impetus from behind being greater, increased rapidity in the whole course will naturally ensue. Thus the origin of the Macquarie being two thousand six hundred feet above the sea, it will be manifest that a considerable impetus must necessarily be given to the more level portions of its channel-current towards its termination.

Three rivers, named Alligator Rivers, were all seen to discharge their waters into Van Dieman's Gulf, at so short a distance from each other, as to make it very probable they will turn out to be the mere mouths of *one* great river. Up two of these Captain King sailed: one having a mud-bar of twelve feet at its entrance, but deepening to six and eight fathoms beyond; and the other having eight fathoms for nine miles up, and shoaling very gradually afterwards to fifteen feet at high water thirty-six miles from its mouth, at which place it was one hundred and fifty yards broad. The bottom and banks were found to be composed of soft alluvial mud, and the country in the direction of its source, and indeed nearly all round, is so low, that no high land could be seen, even in the distance.

No other part of the coast affords such hopes of finding the outlet of our interior waters as this; for almost every where else (as far as examinations have been made), mountains are found to approach so near the coast as to preclude the likelihood of rivers forcing their way through, whilst here the country is one continued level, as far as the eye extends. Even Regent's River, at no very great

distance herefrom, is discovered to have its course nearly parallel to the coast, like our Hawkesbury,—from being jammed in between the sea and the dividing range of mountains so nearly approaching it. The depth of the Macquarie, at the point where Mr. Oxley lost it in the marshes, was five feet only; but it is generally supposed that gentleman had here lost the proper channel, since he had thirty feet of sounding immediately before. For more than a hundred miles of the river's previous course, the depth of water was never less than ten feet, and often as great as thirty — the medium being about twenty,—and the stream navigable much beyond. If the Alligator rivers prove to be the outlet of the Macquarie marshes, and a navigable communication should be traced to them from the Macquarie, a fine field will be opened for successful colonization and commercial adventure; and the supposition is strengthened by the frequently reported accounts of animals resembling alligators being seen in the Macquarie, manifesting its actual termination to be in the sea, and that in tropical latitudes.

At Melville Island, fronting the entrance of the

Alligator rivers, a commercial establishment has been some years formed, for the purpose of attracting the trade of the adjoining Malay islands, and the Chinese trade with the Dutch likewise, to this spot—and certainly few places could be found better adapted for fixing a settlement upon with such a view; but it would require the genius and enterprise of a Sir Stamford Raffles to carry the plan successfully into effect; it has hitherto languished, and must continue to languish until some such able person takes it in hand. Such a position not only commands the whole maritime continent of India, but is the key to a most extensive commerce at present debarred from British enterprise, namely, that of the Eastern Indian islands, from which the Dutch are zealously endeavouring to exclude us;—while it is also an excellent medium position for a great portion of the trade of China to pass through;—the famed trepang so much prized in that empire being produced only on the Australian coast, where the Malays fish for it. But should a navigable communication be discovered from this neighbourhood, opening out the interior of our immense land to agricultural and

commercial industry,—an interior comprising on a most extended scale the countries and climates both of the temperate and tropical regions,—what additional importance will thus be conferred upon this imposing commercial situation!—It is evident, however, that, until the outlet of our interior rivers shall be discovered, the Australian continent can never be looked up to as a country destined to prove either rich or powerful.—The narrow belts of land, generally of indifferent fertility, that we see hemmed in between the barrier ranges and the sea, can never maintain a numerous population. It is in the interior, beyond this barrier, that we are to look for a country likely to realize our hopes of seeing the foundation of a powerful nation laid amongst us; and these hopes can never be in a train to be realized, until an outlet is found for our interior waters, whereby the produce of the varied climes of this immense island-continent may be carried easily and cheaply off, and all its pressing foreign wants cheaply and easily supplied. If these waters have only one grand estuary, this estuary must be navigable for a considerable distance—by reason of the great body

of water discharged through it; and if the Alligator rivers should prove to be the estuary, through their channel we may yet hope to see the present settlers on the Macquarie have all their wants of Indian and Chinese commodities supplied, instead of depending, as now, on the tedious and circuitous route half round the Australian continent. Through this channel also may yet descend the productions of the temperate and torrid regions from which our interior waters are derived; and through it, likewise, Australia may hereafter pour her myriads of hardy sons to control the destinies of the effeminate nations of the East.

As peace is now restored to India, it is to be hoped some ship of war from that station will ere long be commissioned to search for the outlet of these inland waters, that the extensive interior of this little-known continent may be opened to our view, and we enabled to take advantage of the capabilities it may be found to possess.—England has already erected one immense empire in America, and founded, it is to be hoped, another considerable one in Australia,—where her wise institutions; her language; and the very names now borne

by her children, her counties, her parishes, and her towns,—will all be handed down to future ages as an imperishable record of her public spirit, her wisdom, and her greatness. Can all the gains ever to be realized by selfish commerce be compared to the glory of this?

LETTER III.

An elegant light-house of white freestone, with a revolving light, built upon the southern side of the entrance to Port Jackson, and called Macquarie Tower, points out, both by day and night, the precise situation of the harbour. Beside the light-house is a signal-post, and a telegraph, to communicate to Sydney every thing relative to ships leaving or approaching the port. The coast-line here consists of high mouldering cliffs of whitish sandstone, which arrest strongly the attention of the stranger; whilst the country in the vicinity, clothed in a livery of evergreen shrubs, presents a pleasing and refreshing picture to the eye, so long habituated to the dreary and boundless expanse of sea, spread out daily in desert magnificence. The stunted appearance of these shrubs, however, and

the patches of white sand scattered among them, impress on the mind no high idea of the fertility of the soil from which they draw their subsistence. You enter Port Jackson between two high bluff points, named the North and South Heads, about three quarters of a mile apart; and proceeding onwards, the sweet natural scenery of our queen of harbours gradually expands upon your view. You steer nearly west to Sydney, which is distant five miles; the first glimpse you have of its situation being the tall and slender spire of St. George's church, shooting up into the clear horizon before you. The shores onwards are bold, and often precipitous,—agreeably varied in their general outline by romantic little bays, which, with their white sandy beaches, open irregularly to the right and left as you sail along. On each side, the land, broken and moderately high, terminates toward the shore in narrow ridges, covered with native shrubs in perpetual summer verdure, among which, rocks of varied hues peep here and there abruptly out, while slender streams of water, gurgling down the narrow valleys between the ridges, just reveal themselves at intervals, and retire again from view.

To the left, as you steer up the harbour, you first open the pilot-houses, with their clean whitewashed walls and small fairy gardens, perched at the bottom of a snug little sunny bay; then the pretty cottage called The Retreat, formerly the residence of Sir Henry Brown Hayes; and next the beautiful eastern-fashioned mansion of our excellent naval officer, Captain Piper, which, with its tastefully ornamented lawn and delightful grounds, cannot fail to impress the stranger very favourably as to the wealth and height of improvement to which the colony has in its short but prosperous career attained. A few rocky islands, feathered lightly with scrubby brushwood, lie carelessly scattered, as it were, along the course of the harbour; but none of them realize the *poetical* image of Campbell,

And the *long* isles of Sydney Cove to view:

the most noted being one fronting the Cove, bearing the unpoetical name of *Pinchgut*, on account of its having been the primitive prison of the colony, and the spot, also, whereon malefactors were in olden times hung in chains.

Sydney Cove is formed by two ridges running out into the harbour; the one to the left termina-

ting in Bennilong's Point, on the low extremity whereof stands Fort Macquarie, with its castellated martello towers; and that to the right, in Dawes Point, with a fort bearing that name, which in like manner occupies its extremity.—Down the hollow between these ridges a small rill trickles slowly into the head of the Cove, in the rocky sandstone bed of which tanks have been cut, to retain the water during the summer droughts,—an arrangement which proves of material service to the town's-people. Along this hollow, for upwards of a mile, in a westerly direction, extends our main thoroughfare (George Street), which all the other streets either run parallel to or intersect at right angles,—the town thus occupying the whole of the hollow, and creeping up the gradual ascents on each side.—The ridge on the left is successively crowned by the lofty-looking buildings of the horse barracks, the colonial hospital, the convict barracks, and a fine Gothic Catholic chapel; beyond which lies the promenade of Hyde Park, flanked toward the town by a row of pretty cottages, and toward the country by a high brick-walled garden appertaining to the government. On the ridge to the right of the Cove,

rows rising above rows of neat white cottages present themselves, overlooked by the commanding position of Fort Phillip with its signal-post and telegraphic appendages; following which line, we behold in succession, the military hospital and windmill; St. James's church; the Gothic Presbyterian kirk: and beyond these the military barracks, forming three-fourths of a large square and opening to George Street, with an extensive green plot in the centre for purposes of parade. The portion of the town to the right is best known by the name of The Rocks, from the ridge whereon it is built being nothing more than a bare mass of white sandstone, often rising in successive layers (like steps of stairs) from the bottom to the top of the ridge. This is considered the *St. Giles's*, and the division of the town to the left the *St. James's*, portion of Sydney; most of the superior citizens inhabiting the latter, and the lower classes chiefly the former,—though *the Rocks* can undoubtedly boast of many handsome houses with highly respectable inmates. A few hundred yards from the head of the Cove, toward the left, stands the governor's house, with its beautiful domain in

front, ornamented by large trees of the finest and most varied foliage, scattered singly or in clumps; with a fine belt of shrubbery closing in the back-ground:—the whole occupying a space from beyond the head of the Cove to near Bennilong's Point.

Between the domain and the Cove, an agreeable walk has been formed, chiefly in the solid rock, and fenced off from the domain by a freestone wall, which being level at its top with that portion of the enclosure approaching the Point, the interior attractions may be thus pleasantly viewed; and it is in consequence of this circumstance, together with the prospect it commands of the shipping in the harbour, and its communicating with the other fine walks around, that this promenade has become the favourite of our Sunday pedestrians and fashionables,—along which they pour, to enjoy the cool evening sea-breeze among the delightful scenery bordering the shores of the harbour beyond. But the domain, beautiful as it still undoubtedly is, has lost much of its attraction since being deprived of the kangaroos and emus seen, in Governor Macquarie's time, hopping and frisking

playfully about, which never failed to strike powerfully the eye of a stranger on his first sight of them from ship-board, both on account of their novelty to him, and their being emblematical of the country upon whose shore he was about to debark.

On casting the eye, again, from the ship to the right shore of the Cove, you first see the handsome mansion of Mr. R. Campbell, one of our oldest and most respectable merchants, with its garden full of flowers and fruit-trees, and wharf and storehouse toward the beach: next, you observe the town-house of Captain Piper; then the government dock-yard, against the surrounding wall whereof are built the working-sheds and storehouses; with its boat-landings and little wet-docks, scooped out of the adjoining shore; then, the high buildings composing the commissary stores,—beyond which is the wooden government wharf, jutting out into the harbour; and, farther on, the landing warehouses of the various merchants connected with our export and import trade;—a low wall, built across its head, there terminating the Cove, to prevent its being filled up by the alluvial depositions from the rivulet.

Numbers of boats soon surround the ship, filled with people anxious to hear news, and traffickers with fruit and other refreshments, besides watermen to land passengers: a regular establishment of the latter description has long existed here, many of whose members formerly plied that vocation on the Thames, and among whom were a few years back numbered, that famous personage once known by all from Westminster Stairs to Greenwich, by the shouts which assailed him as he rowed along of "Overboard he vent, overboard he vent!" King Boongarre, too, with a boat-load of his dingy retainers, may possibly honour you with a visit, bedizened in his varnished cocked hat of "formal cut," his gold-laced blue coat, (flanked on the shoulders by a pair of massy epaulettes,) buttoned closely up, to evade the extravagance of including a shirt in the catalogue of his wardrobe; and his bare and broad platter feet, of dull cinder hue, spreading out like a pair of sprawling toads, upon the deck before you. First, he makes one solemn measured stride from the gangway; then turning round to the quarter-deck, lifts up his beaver with the right hand a full foot from his head, (with all

the grace and ease of a court exquisite,) and carrying it slowly and solemnly forwards to a full arm's-length, lowers it in a gentle and most dignified manner down to the very deck, following up this motion by an inflection of the body almost equally profound. Advancing slowly in this way, his hat gracefully poised in his hand, and his phiz wreathed with many a fantastic smile, he bids *massa* welcome to *his* country. On finding he has fairly grinned himself into your good graces, he formally prepares to take leave, endeavouring at the same time to *take* likewise what you are probably less willing to part withal—namely, a portion of your cash. Let it not be supposed, however, that his Majesty condescends to *thieve:* he only solicits the *loan* of a *dump,* on pretence of treating his sick *gin** to a cup of tea, but in reality with a view of treating *himself* to a porringer of "Cooper's best," to which his Majesty is most royally devoted.

You land at the government wharf on the right, where carts and porters are generally on the look-

* Wife.

out for jobs; and on passing about fifty yards along the avenue, you enter George Street, which stretches on both hands, and up which towards the left you now turn, to reach the heart of the town. Near the harbour, where ground is very valuable, the houses are usually contiguous, like those of the towns in England; but, generally speaking, the better sort of houses in Sydney are built in the detached cottage style,—of white freestone, or of brick plastered and whitewashed, one or two stories high, with verandas in front, and enclosed by a neat wooden paling, lined occasionally with trim-pruned geranium hedges; they have besides a commodious garden attached, commonly decked out with flowers, and teeming with culinary delicacies. Into the enclosure immediately around the house, the dogs are usually turned at night, to ward off rogues,—and uncompromising, vigilant watchmen they certainly are, paying little of that respect to genteel exterior which their better-bred brethren in England are so apt to demonstrate. The streets are wide, and neither paved nor lighted at present; but the general dryness of our climate and durable composition of our streets render

paving unnecessary; while an elegant set of lamps is now actually in progress, to be placed diagonally at fifty yards distance; and by reason of the whiteness of our houses and clearness of our sky, an illumination will thus be effected equalling some of the best-lighted London streets. Although all you see are English faces, and you hear no other language but English spoken, yet you soon become aware you are in a country very different from England, by the number of parrots and other birds of strange note and plumage which you observe hanging at so many doors, and cagefuls of which you will soon see exposed for sale as you proceed. The government gangs of convicts, also, marching backwards and forwards from their work in single military file, and the solitary ones straggling here and there, with their white woollen Paramatta frocks and trowsers, or grey or yellow jackets with duck overalls, (the different styles of dress denoting the oldness or newness of their arrival,) all daubed over with broad arrows, P. B's, C. B's, and various numerals in black, white, and red; with perhaps the jail-gang straddling sulkily by in their jingling leg-chains,—tell a tale too plain

to be misunderstood. At the corners of streets, and before many of the doors, fruit-stalls are to be seen, teeming, in their proper seasons, with oranges, lemons, limes, figs, grapes, peaches, nectarines, apricots, plums, apples, pears, &c., at very moderate prices.

Sydney, from the scattered state of its buildings, necessarily occupies a great extent of ground, stretching from Dawes Point, in the line of George Street, a mile and a half in *length*; and, from the top of the ridge on the left, across that on the right, (quite to Darling Harbour beyond,) about one-fifth of that distance in *breadth*. The houses, being generally constructed, as has been said, of white freestone, or of brick plastered, have, owing to the tasteful manner in which they are built and ornamented around, a light, airy, and exhilirating appearance. The streets are commonly named after the various governors, secretaries, and other public officers, who have borne sway among us; thus we have Phillip, Hunter, King, Bligh, Macquarie, Brisbane, O'Connel, Erskine, Campbell, and Goulburn streets; the last of which is gravely pointed out by the Sydney

wags as remarkable for no burglary ever having been committed in it; but the mystery is soon unravelled on finding that it does not contain a single house,—being, like many similar instances in America and this colony too, merely a street in *anticipation*.

Sydney contains the parish churches of St. Philip on the right, and St. George on the left; also a Presbyterian kirk; a Methodist and a Catholic chapel; a male orphan school, endowed by the government; and a benevolent asylum, supported by private charity. It has two steam flour-mills, three water-mills, and four windmills, in the immediate vicinity;—while a number of breweries are scattered about the town. An extensive distillery, named the Brisbane, has lately been erected by one of our enterprising traders, Mr. R. Cooper, about a mile onwards upon the Paramatta road, which is now supplying the colony with a pure spirit produced from its own grain; and here too, cordials of all descriptions and of excellent flavour are prepared. The buildings of this distillery are of white freestone, and seated upon a fine little stream of water, surrounded by a

high stone wall, within which are granaries, malting-houses, a water-mill, and every requisite for carrying on an extensive trade. Another large distillery, belonging in like manner to one of our active citizens, Mr. James Underwood, is situated upon the South-head road.

The Australian and Sydney hotels, in George Street, and Hill's tavern, by Hyde Park, may vie with those of any English town of the same size; while a great variety of taverns of an inferior description, and tippling houses to no mean amount, are liberally strewed throughout,—the vending of "strong potations" proving a most gainful vocation in this thirsty climate of ours. Lodgings may be procured readily in all parts of the town by those preferring their quiet seclusion to the bustle of an inn; the most respectable ones not exceeding generally a pound weekly for a single person, and seldom rising above fifteen shillings each when two join in the mess;—the landlady making all your purchases, and *cooking and serving up* your meals for this sum. Public auction-rooms have long existed, where goods of all descriptions are, at stated periods, sold, and where articles may usually

be purchased at a cheap rate,—the most celebrated being those belonging to Mr. Paul and Mr. R. Cooper. Here, as in small English country towns, merchandise of every description can generally be bought at one and the self-same shop (or *store*, as we, like the Americans, call it); the wants of the colony in its present early state not admitting such a division of retail trade as would enable a person to clear a sufficient profit by confining his attention to one single branch. A change is, however, now slowly taking place in this respect, which will doubtless become more and more manifest as the town continues to increase.

Water, as we have previously mentioned, is supplied by the tanks dug in the bed of the rivulet which runs through Sydney, and by wells excavated from the sandstone rock whereon the town is built; but these unitedly being found inadequate in dry seasons, investigations are now going on, to ascertain the practicability of leading in a stream of water from the neighbourhood. These wells are found productive even when situate on the very top of the rocky ridges, if dug pretty deep. They are doubtless filled by the oozings of

the rain-water through the porous sandstone, which serves as a filter to it. I have often wondered that these wells were not enlarged, so that by conducting the rain from the houses into them they might serve as tanks too.

The convict hospital, with the officers' apartments and store-rooms, perched upon the most prominent part of the ridge to the left, consists of three two-story buildings of freestone, ranged in a line, surrounded by a high wall, and each story encircled by a veranda. It is capable of containing several hundred patients; is regulated much in the same way as the naval hospitals in England; and may rank with the best of those for the excellent order in which it is kept.—It is established for the admission of convicts only, and it matters not whether the convict is in the service of government, or of a settler, provided his case is considered a proper one for admission.

At the colonial dock-yard, on the right of the Cove, all the government vessels load, unload, and are repaired; government boats are kept; and the depot of coals for government use is situated. The naval portion of the work is per-

formed by gangs of competent convicts from the barrack; the jail-gang being usually tasked with the lading and unlading of the vessels.

The lumber-yard is a range of workshops forming a square to the left of George Street, near the guard-house; where the goverment carpenters, blacksmiths, and other mechanics, are employed in their various vocations under their respective overseers.

Agreeable amusements are still much wanted, to relieve the dull monotony of a town like Sydney, forming the capital of a small territory, and cut off, in a manner, from all communication with the other parts of the civilized world, excepting by the casual arrival of a vessel about once a month, bringing broken and garbled accounts of occurrences probably some six months old. Partly on account of this tediousness and uncertainty in receiving intelligence, together with the impossibility of any but a very few ever having access to the English prints, to keep unbroken the chain of connexion that links them to home, the affairs of the mother country soon become objects comparatively of no interest to the great body of the

colonists; while colonial news, colonial politics, and conversational discussions about the private affairs and personal good qualities or failings of individuals and families, engross here the whole of the public attention.—In *all* small communities, where people know too much of each other's private affairs, and where consequently idle gossipings and retailings of personal scandal creep in to fill the blanks occasioned by the flagging of other subjects, some such innocent recreation as theatricals, balls, and evening parties, (chiming in now and then to serve for topics of pleasant discussion, and divert the mind from objects only serving to engender bad feeling,) are of manifest utility.—But in a place so long distracted with private and party feuds as New South Wales,—with few subjects "of a day" either of foreign or domestic interest furnished us to talk about, such inoffensive sources of enjoyment would become objects of paramount importance, both as respects the security of the peace and furtherance of the prosperity of our infant community.

A theatre has long been wanted here, to serve such purposes; and a building is now in course of

erection, which is spoken of as being intended for one, by Mr. James Underwood.—No regular subscription balls have yet been set on foot; but private ones are occasionally given; and also *three* annual public balls and suppers, by the respective sons of St. George, St. Patrick, and St. Andrew, as their regular jubilee days arrive;—while the bachelors of Sydney usually make up a splendid *fourth*, where "*bachelor's fare*" forms certainly no portion of the evening's entertainment. Our worthy governor has now however commenced giving his public dinners; and his good lady her even more social *soirées*. Neither does Mrs. Darling confine her polite attentions solely to the adult; but extends them likewise to the juvenile portion of our population, who have been gratified with several youthful fetes. This lady is also one of the most zealous patronizers of the schools for poor children, and likewise patroness of the Female Institution lately set on foot for educating twenty of our young *currency* females in all the requisites necessary to constitute good servants.

A subscription reading-room and library are at

this moment too about to be set on foot by the upper classes here, which laudable example will doubtless be followed by the respectable shopkeepers and traders, as both instruction and amusement may be thus gained at very little cost.

LETTER IV.

DRESSINESS and gaiety of appearance are much affected among our sprightly females; and every London fashion most devoutly "bowed the knee to." The moment a lady blooming fresh from England is known to be tripping along a Sydney street, you will see our prying fair, singly or in groups, popping eagerly out their pretty "repositories for curls," to take note of the cut of her gown, the figure of her bonnet, and the pattern and colour of the scarf or shawl she displays upon her shoulders, that they may forthwith post off to put themselves in the "dear fashion" too. Instead, however, of sighing after China crapes and India muslins, like the English beauties, our Sydney belles languish after nothing but what comes with the name of "London" stamped upon it:

the products of the Eastern loom being here too common, too cheap, and too durable for them to bedizen themselves out with—three defects, either of which would be quite sufficient to condemn a dress in the critical eyes of the majority of the fair. The keeping of a fashionable repository for ladies' dresses has, consequently, been hitherto a most gainful occupation here; and one active individual who flourished in this line has lately returned to England with a fortune which I never heard calculated at less than 12,000*l.* all acquired in about six short years. But the multiplication of show-rooms of this kind, of late, has dispelled the hopes of any more of these golden dreams being realized.

Neatness of dress and personal cleanliness certainly form a very marked feature among a great proportion of the Sydney inhabitants, even when moving in rather an humble sphere, which cannot but excite a pleasant feeling in the mind, particularly when coupled with the reflection, that those who delight in a good exterior are seldom either sottish or depraved. Among the great majority of the houses, too, even of mean exterior, inside cleanliness and comfort appear most conspicuously;

and in passing along one of our back streets, about the dinner-hour, you will almost uniformly observe a clean newly-unfolded cloth spread upon the table, with a shining show of dinner-utensils upon it,—all equally inviting; which, together with the pure whitewashed wall, and the articles of comfort and even luxury ranged round it, convey a very agreeable impression to the mind.

Sobriety, however, by no means ranks among the conspicuous virtues of our general population; —many, very many, of our dear citizens, keeping up devoutly the religious festival of St. Patrick from year's end to year's end. "Why, Dennis," said I to a sottish Hibernian, whom I had seen for some weeks in a state of *oblivion*, "surely St. Patrick could not be born on *every day* of the last *month!*"—"Och, it is only my own bad memory that makes me so *particular*, sir; for having a mighty love for the saint, you see, I always begin keeping his birth a fortnight beforehand, lest I should *forget* the day; and after it is over, why the devil burn me but I always *forget* to leave off!"

A commodious market-house stands upon the

right of George Street, beyond the military barracks, beside which a large plot of ground is also set apart for the display of articles that may be brought for sale on the market-day. A row of wooden sheds closes in the back-ground, where traders trick off their showy wares, while numerous stands occupy the open fore-ground, crowded with the various productions of English or colonial manufacture. The whole is placed under the charge of an officer named Clerk of the Market, and good order is preserved throughout by the beneficial regulations in force. It is held on Thursdays, and attended by individuals from the distance of forty miles or more, with the produce of their agricultural industry. During the preceding day, as you journey toward the interior, you will encounter file after file of carts, loaded with wheat, maize, potatoes, pease, carrots, turnips, cabbages, fruit, pigs, calves, poultry, and indeed all sorts of commodities for culinary use, pouring along the road toward Sydney. A considerable number of oxen are usually sold at the market by auction or private contract, and horses also frequently disposed of. Good bargains may often be got by

watching opportunities—that is, if you are *properly* furnished, the dealings here being all for *money*. It must be confessed, nevertheless, that the general run of the stock realizes the dream of Pharaoh; for indeed you might almost tie your handkerchief in a beau-knot round the bellies of some,—or detect a fellow picking a pocket, through the sides of others; into such delicate shapes have they been refined by the *genteel* fare whereupon the poor beasts had so long previously subsisted. A row of commodious buildings extending on each side and up the middle of the market square, has just been planned out for execution by the government, which will, when completed, confer a great benefit upon the public.

Not the least attractive novelty here, however, to the eyes of a stranger, will be the numerous beautifully-plumaged parrots exposed to sale,—either young ones from the nest, or old ones snared during harvest; all of which, when thus newly taken, are usually disposed of at from sixpence to one shilling each.

Sydney is divided into six police districts, with a lock-up house and a night-watch, under the

orders of a conductor, attached to each. Constables are also on the alert through the town during the day to pick up offenders. The whole is under the direction of the chief constable, who again acts under the orders of the head magistrate, by whom (with the assistance of two ordinary magistrates) charges are investigated daily at the police office; the offences being either summarily punished, or sent for adjudication before the criminal court, or quarter-sessions,—according to their magnitude, or as committed by convicts or free men.

The jail is a most wretched structure, situated in George Street; but another commodious one is now building on the South-head road. The court-house for civil and criminal proceedings stands close to St. Philip's, fronting Hyde Park.—When strolling through the streets of Sydney on first landing, very singular reflections will naturally intrude upon the mind, on perceiving the perfect safety with which you may jostle through the crowds of individuals now suffering, or who have suffered, the punishment awarded by the law for their offences: men banished often for the deepest crimes, and with whom, in England, you would shudder to

come in contact. Elbowed by some daring highwayman on your left hand, and rubbed shoulders with by even a more desperate burglar on your right—a footpad perhaps stops your way in front, and a pickpocket pushes you behind,—all *retired* from their wonted vocations, and now peacefully complying with the tasks imposed upon them, or following quietly up the even path pointed out by honest industry.

But nothing will surprise you more than the quietness and order which prevail in the streets, and the security wherewith you may perambulate them at all hours of the night, indifferently watched as they are, and possessing so many convenient situations wherein robbers may conceal themselves, pounce upon you, and make their escape with their booty without even a chance of detection. I have frequently been out at very late hours, and passed through many gloomy portions of the town, but never met with a moment's interruption. Indeed, a street robbery is a most rare occurrence. Petty thefts and burglaries are much more frequent, but these also are insignificant in amount, Even robberies of masters by convict servants are

far from being common, and more is generally made of these than their magnitude intrinsically deserves. In fact, the thefts they commit are generally for the purpose of regaling themselves with spirits, and this can only be done in the vicinity of towns. They are more strictly watched, and by consequence usually more speedily detected, than such as have hitherto borne an honest character; they are more certainly punished too, because we have no previous sympathy with them; and their offences are also more liable to be construed into crimes of a deeper die, inasmuch as, knowing them to have been formerly bad, we are naturally led to believe that the robbery now brought to light is but one of a long series they have been committing, therefore we feel little disposed to look over offences in them, for which we would possibly never think of prosecuting a free servant in England. Brick walls however afford but a sorry defence against *our* expert and ingenious burglars, who will pick a hole through one of such in a very few minutes,—no part of a house being safe; back, front, and gable, proving all equally inviting. They

will effect their breach with a celerity and a silence which few new-comers feel disposed to give credit to, until they awake some morning vestless and bootless, and on prying round in quest of their stray habiliments, find themselves unexpectedly assisted in the search by the *friendly* face of daylight now peeping through a port-hole in the wall, where no daylight had peeped before. Stone walls are therefore generally preferred for warehouses and stores, where articles of value have to be deposited. Captain Rossi, our present police magistrate, has effected most beneficial reforms in his department since his assumption of office, the whole police having been remodelled and placed upon a more respectable as well as efficient footing; while his zealous efforts to chain down the demon of drunkenness, who had long been raging loose among us, deserves the very highest praise,—particularly in reference to a colony like this, composed of such dissolute materials.—In ability on the bench, discrimination, sound judgment, and a strict undeviating sense of justice, we may never probably have one to exceed our

late police magistrate, Mr. Wentworth; but he was certainly very deficient in the tact of keeping in action a strict surveillance.

Crimes, naturally enough, form, in our small community, a considerable portion of the food of our conversational circles. There is, in fact, frequently so little else to talk about, that a bush-ranger affair, or adroit robbery or burglary, opportunely chiming in when other topics fail, serves often as well as a city procession or lord-mayor's-show to eject the demon of *ennui* who had quietly taken up his seat in the porch. The rules of *multiplication* and *addition* have long been in such good practice here too, that you are often puzzled to recognise, an hour afterwards, the very entertaining robbery you yourself perhaps had been at so much pains in *inventing*,—disguised as it has since become by the various interesting episodes of house-burnings, batteries, &c. that may have been ingeniously pinned thereto by other fingers. In fact, owing to this accumulative system, it would be wise in all cases, to make a deduction of twenty-five per cent from the gross amount of every frightful story you hear.

Another thing worthy of observation is, that so many offences are cognizable by our magistrates here, which an English bench would not or perhaps could not take notice of, that such may be fairly said to form a full half of those which occur; —for instance—insolence, neglect of work, drunkenness, running away, absence without leave,—and so on. In mentioning, therefore, that eight hundred individuals, exclusive of those committed to the *criminal* court, had passed examination before the Sydney bench during the three first months of this year (1826), I beg you will not be too much startled; but preserve your equilibrium when I tell you that forty-one police cases were decided upon *one day*, (viz. March 30th,) whilst on the 12th of the same month not a *single offence* appeared for investigation before the bench. Times were really looked on as becoming so stupid from the total eclipse of crime that had now first taken place in the memory of the oldest inhabitant, —that the worthy magistrates, in order to keep up the spirits of the people, issued seventy-six *spirit* licenses on that very day, as is duly recorded in the pages of our facetious '*Australian*.'

Although twenty constables were on March 30th actually deficient in our Sydney police, (from the want of *fit* persons to fill these situations,) yet you saw nobody look the sadder for it, nor even shake their heads and sigh on reading the following list of captives in the jail: viz. for trial, twenty-one; under transportation, twenty-five; death recorded, three; runaways from Port Macquarie, eleven; do. Newcastle, eleven; for imprisonment, thirty-eight; under transportation by magistrates, forty-four; at labour, seven; debtors, sixteen;—grand total, one hundred and seventy-six. I had nearly forgotten to mention an excellent law, passed lately, subjecting to punishment all convicts found out after eight P. M. without a written pass from their master, or a lighted lantern in their hand, which *lighted lantern* only requires to be enforced in *all* instances after *ten*, to render the regulation most effective.

Sydney is most abundantly supplied with fish, which are caught with hooks and lines, chiefly towards the heads of the harbour, by the native blacks, and disposed of to the retailers, who hawk them about the town; the sounds of "Fish O,"

"Hot rolls, all hot," and many other English cries, often chiming in agreeably upon your ear "right early in the morning;" *agreeably*, I say, from their recalling to your remembrance, in these unmusical strains, scenes you have so newly forsaken. King-fish, mullet, mackarel, rock-cod, whiting, snappers, bream, flat-heads, and various other descriptions of fishes, are all too found plentifully about. Mud oysters are brought over from Botany Bay, where they are abundant; and by fitting yourself out with a few slices of bread and butter, and other requisites, and taking a pleasant stroll round any of the romantic shores of our beautiful harbour, you may quickly secure a cheap and most delicious lunch from the sweet and finely flavoured rock oysters wherewith all its tide rocks are crusted, and which are collected by poor individuals and sold shelled at a shilling a quart. Cray-fish, lobsters, and prawns, are also commonly found; while the little bays are perfectly alive with myriads of crabs during their breeding season, which may be observed moving quickly off into the sea on your approach, in such numbers, indeed, that the beach seems as if suddenly endowed with life, while

these startled hordes are hurrying onwards (in hobbling sidelong gait) and wheeling themselves down into the soft sand, over which the sea ripples. It is very amusing, too, to hunt the young crabs into their element, in order to witness the way in which they are assailed by the young toad-fish, who appear always on the watch to make them their prey, darting to the very edge of the water the moment they perceive the tiny swarm approach, in order to seize them before they can burrow into the sand. So eager are many of these to secure a feast, that they often run aground in endeavouring to accomplish their purpose. They are rarely successful; but when an unlucky member of the crab brood falls into their clutches, they cluster round, and each seizing a limb, shake and worry their victim as eagerly as a pack of hungry beagles would a helpless hare. It has often been matter of wonder to me, why the mode of catching fish by means of fishing-baskets, as practised by the French, Portuguese, and Spaniards, has never been followed at Sydney; particularly as having already been found to answer so well, from the

circumstance of two fish-baskets, brought by some sailors from the Brazils, supplying not only the cabin, but the whole crew, with abundance of fish daily, while the ship lay in the harbour, merely by sinking these baskets over the ship's side.

The pleasure-walks and drives in the vicinity of Sydney constitute not the least of its attractions. The delightful promenade round the government domain we have already noticed; turning to the left in your onward course down the cool shady carriage-drive, called Mrs. Macquarie's Road, which winds round the long, narrow, and closely-wooded point facing Garden Island, your pleasurable feelings will be still more sensibly excited. The abrupt shores are here romantically diversified with huge masses of rock, scattered irregularly along them, or jutting out in shelving cliffs, affording an agreeable retreat from the rays of the noon-day sun, where you may revel in the luxury of the cool sea-breeze, and enjoy the variegated marine prospect spread out before you. Fronting the beach, at the extremity of this point, is a commodious seat, hewn out of the rock, which

projects like a pulpit canopy over you, and at the back whereof is an inscription recording the year of its formation, and under whose auspices it was executed.

The South-head road is, however, the grand equestrian resort, along which, gigs with well-dressed people, and spruce dandies *à cheval*, may be daily seen careering. Sunday is here, as every where else, the great gala day, when all the various equipages are most profusely shown off;—when the animating bustle here displayed, the clouds of starting dust scattering abroad from behind the carriage-wheels and heels of the horses, and the passing smiles and *congés* of the different groups hurrying backwards and forwards, present a very lively picture. The road terminates at the tall and airy light-house, perched upon the bold headland forming the southern entrance of the harbour, and overlooking the whole southern ocean, spread out in boundless expanse before you. Midway, a road to the left carries you to a rising ground named Bellevue, level at top, and commanding an extensive view of the ocean, and

all the surrounding wild natural scenery. The country on the route will afford few charms to the mere agriculturist, alive to no other attraction save fertility of soil; but to the admirer of untamed nature, in all her primeval variety, this spot, where low undulating hills (of rock and sand) lie scattered about in disorderly array, garnished with shrubs in liveries of the freshest green, and flowers of the liveliest hue, cannot fail to impress its beauty on the heart too deeply to be readily forgotten.

Abundance of gigs may be hired in Sydney at fifteen shillings a day, and riding-horses at ten shillings, so that you may readily visit every spot worth seeing in the vicinity. A four-horse stage-coach runs twice a day, and a caravan once, between Sydney and Paramatta (a distance of fifteen miles), and another coach thrice a week to Liverpool (twenty-one miles), while a third proceeds from Paramatta to Windsor (twenty-three miles) three times a week also; so that you may thus travel thirty-six miles into the interior westerly, and twenty-one miles southerly, by stage-coaches alone; a proof of the goodness of the interior communi-

cations, and of the wealth and populousness to which our infant colony has attained, since it can, at this early period, support such an enterprising and expensive undertaking, in the conveniences arising wherefrom even many of the old countries of Europe are yet deficient.

LETTER V.

THE inhabited parts of the colony cultivated by free people may be divided into four. *First*, the old settled division, comprehending the county of Cumberland (in which Sydney lies), and the county of Camden, southerly, between Cumberland and Argyle. *Secondly*, the counties of Argyle and Westmoreland, and the unnamed country beyond, to the left, or *southward* of Sydney. *Thirdly*, the counties of Northumberland and Durham to the right, or *northward* of Sydney, situated upon Hunter's River: and, *Fourthly*, the counties of Roxburgh and Londonderry, beyond the Blue mountains, interiorly, or *westward* of Sydney, known best by the name of Bathurst. The three first divisions all lie between the barrier

range of mountains, stretching parallel to the coast forty miles interiorly, and the sea, consequently all their waters run into the sea *easterly*; while the *fourth* division (Bathurst) lying *beyond* this barrier range, consequently *its* waters run *westerly*, and terminate in the immense interior swamps, the outlet whereof is yet a mystery. Carriage roads lead from Sydney to them all, excepting the *third* division spoken of (upon Hunter's River to the *northward*), to which there is yet but a cattle track. The main road from Sydney runs on in a line with George Street toward Paramatta; another road strikes off to the left of this, about the sixth milestone, towards Liverpool, and thence on to the *southern* counties of Argyle and Westmoreland. Just before reaching Paramatta, a road turns off to join that leading to Liverpool, which town it connects with Paramatta. One road turning off from the portion of the town of Paramatta situated beyond the river, runs backward along the right bank of the stream toward Sydney, to communicate with the numerous farms upon that line; while *three* others branch off toward the interior from near this point. The *first*, toward

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the right, runs on to the town of Windsor, situated upon the river Hawkesbury, at the foot of the Blue mountains, where, crossing that river by a punt, you join the road leading to Hunter's River. The *second* road, to the left of this, carries you to Richmond (twenty-one miles), situated upon the Hawkesbury, at the foot of the Blue mountains, also; and crossing the river by the punt, or at a convenient ford, you may join the Hunter's River road from this too, or proceed on to Bathurst, beyond these mountains, by the new cut now in progress. The *third* road, farther to the left still, passes on to Emu Ford, likewise upon the Hawkesbury, where it crosses the Blue mountains to Bathurst, this being the original route by which that fine portion of country was first discovered. By means of these roads, Sydney is therefore connected with all the colonized portions of our territory. A number of cross-roads in the county of Cumberland either connect these main ones, or open laterally other portions of the country.—All these roads are regularly cut and levelled, and the majority of the principal ones Macadamized. In Cumberland both the main and cross roads are

generally fenced too, on each side, by four-rail fences, and toll bars established upon the great thoroughfares throughout, from which a considerable revenue is collected; no less than three turnpikes surrounding Paramatta alone.

Cumberland commences at Broken Bay, the outlet of the Hawkesbury, sixteen miles beyond Sydney, and stretches along the sea-coast to the southward fifty-six miles, counting in this line in southerly succession the harbours of Broken Bay, Port Jackson, and Botany Bay, calculated for large ships, and Port Hacking, for small craft. It is about forty miles broad, backed by the Blue-mountain range westerly, with the Hawkesbury sweeping round it, and forming its northern and western boundaries as the sea does its eastern, while the Cow-pasture river, from where it joins the Hawkesbury, extending south-easterly to an origin within thirty-five miles of the sea, forms its boundary in that direction, leaving thus only these thirty-five miles on its southern line in which it is not surrounded by water. Cumberland contains the towns of Sydney, Paramatta, Windsor, and Liverpool, all fast increasing in population and

rising into importance. Camden lies to the southward between Cumberland and Argyle,—the Cowpasture from the S. E. and Wingecarabee from the S. W. forming by their junction with the Hawkesbury its boundaries on these lines,—lying thus in the fork formed by their meeting. It extends in length sixty miles to the S. E., Shoalhaven port and river forming its boundary in that direction, thirty-five miles to the south of Port Jackson; the sea, in a direct line of thirty-five miles, constituting its eastern boundary. Its breadth is about twenty-six miles.—Shoal-haven is its only port, and this too calculated but for small vessels, being very dangerous of entry, even for these, from the number of its shoals. This port forms the extreme point of coast population southerly, Messrs. Berry and Wolstonecroft, two of our most eminent merchants, having a flourishing and extensive establishment here, where timber is sawed for the Sydney market, and tobacco and various other valuable products cultivated, besides a large herd of cattle maintained. No towns have yet been founded in Camden, and it possesses no artificial cross-roads; but the openness and

easy accessibility of nearly all the fertile portion render these in a great measure unnecessary at present. Camden is watered by the branches of the Cow-pasture and Wingecarabee rivers falling into the Hawkesbury, and by some stray branches of the Shoal-haven river; while Cumberland has, to supply its wants, the south and east creeks coming from the S. E. to join the Hawkesbury at Windsor, as also the S. W. arm of the latter river terminating in Broken Bay, and George's River passing Liverpool and falling into Botany Bay. Various small streams and chains of ponds are found throughout both; but, generally speaking, these two counties are very defectively watered, and few springs are to be found,—I know indeed of only two within their boundaries,—a circumstance chiefly owing without doubt to the impermeable nature of the clay soil, which prevails so much throughout, neither admitting the rains to filter through into the channels among the understrata, nor permitting the water that may be contained in these strata from bursting forth.—The compact nature of the understrata, the general dryness of the climate, and irregular interval at

which the rains usually fall, may all end too toward the formation of its present character.

Numbers of gullies worn by the rains are to be found about, in which deep holes have been excavated, at irregular intervals, by the occasional torrents that pour through them, where water is generally contained for a considerable portion, or sometimes the whole of the year.—This water is often brackish, and thence disliked by the cattle, though I have known sheep eagerly drink it in preference to fresh, but the nature of the saline ingredient might in this instance have been different. The brackish water has usually a nauseous sweet taste; but in the fresh-water holes the liquid is good, and much relished by the cattle, as water standing upon clay commonly is. Digging of wells in the country has not, that I am aware of, yet been had recourse to; neither has boring been hitherto tried, although we have an apparatus here for the purpose; but both, I should think, would be found in some measure to answer. The digging deep holes however in these gullies; the puddling them well; and the covering them with a bark-shed, or planting trees round, (to keep the water cool and

check its evaporation, by the shade afforded,) must be eligible, and would probably prove a cheaper mode than either sinking or boring, while it would certainly be more convenient for the cattle. I travelled for twelve miles once along one of our main roads, in the height of summer, during a piping-hot north-wester, the country blazing around me,—a temperature being thus kept up almost equalling a baker's oven,—yet I could only obtain one solitary drink of hot muddy water throughout all that distance.—Another time, in crossing through the district of Airds, on asking for a glass of water, the good dame proffered me *milk*, as a substitute—apologizing for the non-production of the simpler element, as it had to be brought from a distance of two miles, and even then only got in insignificant quantities.—Many fine portions of land throughout the colony are now lying unoccupied *on this very account;* but as population increases, and capital accumulates, their value will be so advanced, as to tempt individuals to expend a portion of that capital in supplying the lands with water, to render them habitable for both man and beast;—and how many fair portions

of England would at this very time have been just as badly off, if digging, boring, and pond-making, had not been had recourse to! There is certainly a considerable portion of saline matter in most lands throughout the colony. You will see it often, in dry weather, lying like a hoar-frost upon the ground in the vicinity of ponds; while in the burning of the stumps, it covers the outside of the earth-kiln with a thin powdery efflorescence. The water in some of the ponds presented distinctly to me the sweetish astringent taste of alum; but regarding the powder I cannot positively speak.

In Cumberland, the land immediately bordering upon the coast is of a light, barren, sandy nature, thinly besprinkled with stunted bushes; while, from ten to fifteen miles interiorly, it consists of a poor clayey or ironstone soil, thickly covered with our usual evergreen forest timber and underwood. Beyond this commences a fine timbered country, perfectly clear of brush, through which you might, generally speaking, drive a gig in all directions, without any impediment in the shape of rocks, scrubs, or close forest. This description of country commences immediately be-

yond Paramatta on one hand, and Liverpool on the other; stretching in length south-easterly obliquely towards the sea, about forty miles, and varying in breadth near twenty. The soil upon the immediate banks of the rivers is generally rich flooded alluvial, but in the forests partakes commonly of a poor clayey or ironstone nature, yet bearing usually tolerable crops, even without manure, at the outset. In Camden, the Mittigong range runs south-easterly through its whole length, terminating close to the sea in the Illawarra mountain, fifty miles south of Sydney, down the steep side whereof passes the rugged bridle-road to the beautiful, fertile, and romantic district of Five Islands, or Illawara. From this range occupying so much of its interior, the quantity of land in Camden capable of cultivation is not very great, though making up tolerably by its richness for deficiency of extent; but the pasture land therein is not exceeded in quality by any in the colony.

In Australia, you may always quickly tell, by the species of timber you see growing, what the quality of the land for agricultural purposes is,—the

apple-tree marking the good, and the spotted gum and stringy bark the bad,—as truly as in the American wilds the beech or maple demonstrates the one, and the pine the other. On these hungry soils however, whereupon when cleared you look but for a wretched crop, trees of the stateliest dimensions may be seen growing, manifesting that there is a species of nourishment in the ground well suited at least to the growth of some descriptions of vegetable substances; and that a proper cultivation may hereafter produce such a revolution among its constituent particles, as to make it equally suitable to all. You will see here, too, as in England, (and indeed every where else,) that, as the forests become more open, so in proportion will the trees be found more short and branchy,—so that on the open plains and downs, dotted thinly over with timber, the trees will be observed branching out at a very little distance from the ground, and good for nothing but fire-wood. It requires trees to grow thickly together, every where, to force them upwards into a long stem. In this state of sweltering crowdedness, there appears to be constantly a deadly struggle going on among

them, to overtop and overshade each other, in order to enjoy the luxury of the cool and healthy breeze fanning their feverish heads, and the reviving rays of the sun shining brightly above them. (It is like a suffocating man in a crowd rising upon the shoulders of those around, to devour greedily the free and fresh air, heedless of sacrificing the lives of others in the attempt to save his own.) An unobstructed circulation of sun and air almost invariably produces an early branching out, and consequently a sacrifice of that food in the nourishment of useless branches which ought to be appropriated to the growth of the more useful stem. The chief end, in a corporeal sense, aimed at by every living thing, is the production of the means destined to serve for the future propagation of its species. Fruit and seed are what all vegetable substances aim thus to produce. The trunk is but of secondary import in vegetation, being merely the tube through which the ground-nourishment is conveyed to administer toward that great purpose; and hence it naturally follows, that the *shorter* this tube is, the more speedily will that nourishment reach its destined places, and the less

of it be dissipated. The *short* stem is generally the free choice of nature; the *long* stem generally the compulsory effect of circumstance. In the greater thickness of the stem, therefore, we merely see a greater volume in the conveying tube, denoting that the increased demand for nourishment at the extremities, requires an increase of power in the medium through which this nourishment must be supplied. A plant pushes forth its stalk and its young shoots first;—as a boy pushes first up in stature, then makes a temporary stop till the productive powers of his system add a proportionate thickness to it—the lengthening and the strengthening process seldom going on at the same time, and the first invariably preceding. But the branches and leaves are as essential to the growth of a tree as its roots, conveying as they do also a most necessary sustenance to it. The sun and air minister to the tree's wants through the medium of the leaves; and in branching quickly and freely out, to put forth these leaves both speedily and numerously, we only see the branches and leaves which collect the one kind of nourishment, following the example of the roots, which collect the other, in

seeking to draw by the most direct route, and by the most extended means, that species of food which it is their peculiar province to furnish.

As we see fevers and many other diseases prevail greatly at the periods of spring and autumn, when the great changes in vegetation take place, it may be curious to inquire whether such changes can have any effect in producing these diseases, in unison with the vegetable putrefaction occurring in autumn; and whether the *evergreen* state of *our* forest trees—admitting the decomposition of the noxious particles of the air to go on throughout the whole year—may not be a reason (in conjunction with the lesser vegetable putrefaction) for our total exemption from the evils alluded to?

After the novelty of Sydney is nigh worn away, the first country jaunt you naturally incline to take is towards Paramatta, situated at the head of boat-navigation and tide-flow, whither two coaches, a caravan, and two passage-boats, daily proceed, thus affording the choice of either a land or a water trip. You will perhaps enjoy your excursion most by going one way and returning the

other. By water, you pass round Dawes Point, and turn up to the left towards your destination. You will probably have pointed out, before you advance far, the site of the cottage of William Bradley, a poor but industrious old man, whose awful end some years ago excited a most extraordinary sensation in the colony. This cottage had become the frequent house of call of an eminent merchant, who passed occasionally half an hour in chit-chat with its aged inhabitant, on his way to his country retreat on the North Shore. But this gentleman having for several weeks observed the house to be closely shut up, and finally all about it fast falling to decay, began to wonder what could be the meaning thereof; when seeing at last as he went by one evening the door open, he forthwith landed, and proceeded towards the cottage. But a woful change had been wrought since the period of his last visit, not a vestige remaining that could indicate its having once been inhabited; every disposable article was carried off, and the whole interior mouldering into ruin. A fierce and famished dog gnawing a bone upon the floor seemed disposed by its growling to dispute his

entrance, when, on driving it from its repast, you may easily conceive what was his horror on recognising the bone which the creature was so eagerly devouring to be that of a human being! The dreadful truth at once flashed upon his mind, that poor Bradley had been *murdered*, and that the dog, impelled by necessity, was now feeding on the corpse of its kind old master. The circumstances were without delay made known to the magistracy; but after the most diligent search, the residue of the old man's remains could no where be found. A scheme, however, subsequently put in practice by the intelligent gentleman who first made the discovery, proved successful; which was, that of tying up the dog until sore pressed by hunger, and then watching it to the spot where it found its food. The body was thus discovered tossed into a shallow grave in an adjoining brush, and thinly covered with earth; it had been torn out piecemeal by its devourer; who, assisted in his ghastly work by troops of maggots, had left little else than the skull and a few of the principal bones. A convict-servant,

known to have been in Bradley's employ, was taken up on suspicion, and proof being adduced of his having sold various articles belonging to the old man, he at length confessed the crime and was executed at Sydney.—After rounding Dawes Point, you have a fine view of Cockle Bay, now Darling Harbour, formed by Dawes and Pyrmont Points, on which latter Mr. John Macarthur, the father of Australian sheep-husbandry, is now erecting a superb mansion, to add another gem to the great natural beauty of the prospect. All that portion of Sydney, situated behind the ridge forming Dawes Point, known by the name of the "Rocks," is now laid open at a single glance; and the various tasteful white cottages with which it is studded, will prove to you that the "vulgar Rocks," is eagerly essaying to throw off the plebeian slough in which it has long been enveloped, and take its station among the more *genteel* quarters of the town. Mercantile wharfs and warehouses you will perceive are fast rising here too; and indeed, from the depth of water in the harbour and the excellent roomy anchorage afforded

thereby, Darling Harbour bids fair soon to rival Sydney Cove in bustle and importance. Several woody islands lie immediately off it, on one of which a dockyard is about to be erected, for the fitting out and rendezvous of our colonial marine. Few cultivated spots are to be seen on either bank, until you reach about half way up the river; but instead thereof, abrupt rocky shores, garnished with green shrubbery to the very water's edge; gently undulating hills, shrouded in livery of the same; and rocky or sandy bays, scooped out here and there, wherein the temporary huts of the woodmen and grass-cutters, or the smoke of the migratory salt-boilers, are occasionally visible. About seven miles up, to the right, is Squires's tavern, with its boat-wharf, and adjoining cleared enclosures and ample orchards. Its enterprising proprietor, now no more, was the first colonial brewer, and long too the *only* one who prepared a colonial *solatium* for our drouthy population. Squires's beer therefore was as well known and as celebrated in this as Meux and Co's. in your hemisphere. An epitaph on one of its votaries in Paramatta church-yard, (which the jocose compounder of the

beverage took a pleasure in quoting,) records its *virtues* in these two expressive lines:—

> Ye who wish to lie here,
> Drink Squires's beer!

After you pass this, farms and houses shortly begin to appear on your right, and on your left you will quickly reach the extensive salt-works of Mr. John Blaxland, with his pretty cottage, gardens, and ornamented grounds, occupying the rising landscape behind them. A tide-mill on the right succeeds these, when the country now opens into a succession of grassy or cultivated enclosures; till, turning a corner beyond them, the sylvan retreat of Vineyard Cottage, the residence of Mr. H. Macarthur, peeps suddenly and enchantingly out from among the natural evergreens and orange and other fruit-trees embowering it, with kangaroos hopping over the lawn in front, and more interesting groups of pretty children possibly adding animation to the scene. Farther on is the Female Orphan School, occupying a commanding site on the same side, surrounded by its lawns, gardens, and native shrubberies; while on your left, the

cottage of Mr. John Macarthur, and its adjoining yellow buildings, are seen at half a mile distance, perched upon a rising ground with a lawn in front, and an orchard and a garden crowded with fruit-trees, flowers, and similar luxuries, stretching down toward the bank of the river.—*River* it is called, though more properly but a narrow arm of the sea, for the water is perfectly salt until just beyond Paramatta bridge, where a dam thrown across by Governor Macquarie checks the farther advance of the tide. Onwards, to the left, a large brick commissariat store occupies a situation close to the beach, permitting boats to go alongside and have their cargoes hoisted up into its capacious granaries; while beyond this is a water-mill,—a dam being here carried across, to keep up the necessary supply to work it. You land at the commissariat store, and an agreeable quarter of a mile's walk now carries you into the very heart of Paramatta.

In proceeding to this place by the stage, you start from the Rose and Crown, in Sydney, at eight in the morning, or at four in the afternoon—the inside fare being six shillings. The coach car-

ries six insides and six outs; is well fitted up; and four strong spirited horses carry you merrily along through the Sydney streets, the bugle warning, as you proceed, all for "Paramatta! Paramatta!" to hasten to their places; while, on a seat behind, the postman with a brown leathern pouch slung over his shoulders (containing His Majesty's mail), transports to and fro the ordinary queries, congratulations, and "How d'ye do's," of the lieges to each other, together with the amorous *billets-doux* of our love-stricken youth, breathing vows as warm and as pure as their native clime. You pass, at the farther end of Sydney, the Brick-fields, where all the town bricks are made; and here you see two small pottery furnaces, where our coarse colonial pottery wares are manufactured. Crossing the hollow beyond, you pass again, to the left, the Carters' barrack and its adjoining garden. A handsome Gothic gate, with a cottage in the same style, displays to you the first toll-bar erected in the colony; farther on, you pass Brickfield Farm, belonging to government, with its ample cleared and enclosed grounds, studded with clumps of acacia; then the Brisbane distillery; while, at

four miles distance, an avenue ornamented on each side with our tall tapering Norfolk pines leads to the country-house of the late Col. Johnstone. The road towards Paramatta is altogether composed of ascent and descent, (though few of these can be called steep,) no pains having been taken to diminish the carriage-draught by an inclination to the right or left; while the land is generally very poor, and the scenery uniform,—so much so, indeed, that an Irish gentleman, well accustomed to the road, being thrown one morning from his horse while going to Paramatta to breakfast, and stunned by the fall, could not, for the life of him, make out on *which hand he ought to turn,* nor was he convinced he was proceeding *back again* to Sydney till he met Colonel Johnstone returning thence, whom he had met an hour before on his way to it!—On each side of the road is a post and rail fence, while the land is thickly covered with heavy timber and brush, the soil being usually a poor shallow reddish or ironstone clay, the contemplation whereof presents but little pleasure to the agriculturist. At Barker and Norris's, however, (a neat public-house on the right,) you will

have a specimen of what industry can accomplish even on our most wretched soils, in the fine flourishing enclosures of English grasses, neatly ornamented with young thriving saplings, which lie on each side of their clean and comfortable-looking cottage. The Liverpool road turns off to the right, about five miles on, and at the eighth mile is Mr. Underwood's inn, at which the coach changes horses, another very stylish-looking tavern appearing farther on. The government farms of Grose and Longbottom are passed on your right, and Petersham (appertaining to Captain Piper) on your left; small cottages or bark-huts here and there intervening, until the imposing mansion of Homebush (the country residence of Mr. Wentworth) is seen in the distance—the land surrounding it being completely cleared of timber to the extent of one thousand acres, and divided by post and rail fences into regular fields. Paramatta toll-bar soon after appears in view, with the Liverpool road branching to the left, the distance to Liverpool being nine miles. From the top of the toll-hill, the whole town of Paramatta is seen spread out before you; the church, with its double-

topped steeple peering out in the middle; the elegant government-house, with its extensive and tasteful domain, bounding the town beyond; and the handsome brick house of the Rev. Mr. Marsden crowning a fine rising ground to the left, surrounded by thriving clumps of trees, and overlooking the whole town, scattered loosely over the hollow beneath.

Paramatta occupies a great extent of ground, stretching out even to the other side of the river, (over which is a bridge,) and cannot contain less than three thousand inhabitants. The greater portion of the houses are unconnected, being generally detached cottages partly surrounded by gardens, although a considerable number are of two stories, and many likewise built with great taste and elegance. The soldiers' barrack, the convict barrack, and the jail, are all rather prominent objects. The streets are regularly laid out about east and west, and north and south, and are, like those of Sydney, neither paved nor lighted, but patroled by a regular watch.

Besides the established church, there is a dissenting chapel; while crossing the bridge and

walking about a quarter of a mile to the left, you come to the Female Factory, surrounded by a twelve-feet high wall, which, however, some of its liberty-loving inmates occasionally find no great difficulty in clambering over.

The Golden Fleece, a commodious two-story brick inn, with a green lawn before it, surrounded by a carriage-way railed in at front, with a gate at each corner (to admit of easy *entrances* and *exits*), is the Paramatta head-quarters of the royal mails; and possesses every thing requisite to tempt you to stay another day to survey the lions of the place.

Most of the houses in Paramatta are built of brick, or white freestone; but no inconsiderable number are *clap-board* buildings, all roofed, as in Sydney, with iron-bark shingles, which ultimately assume so completely the leaden hue of slate, that it would be no easy matter to tell the difference at a little distance.

From lying thus in a hollow, surrounded by moderate rising grounds, Paramatta is a very hot residence in summer, the difference between it and Sydney being seldom less than from six to ten degrees of temperature. When the fields are

all clothed in their brightest green, a view from any of the rising grounds about, would compel even the veriest of splenetics involuntarily to exclaim "Charming!"—The cottages, of purest white, shining in our clear cloudless sky like transparent alabaster, gemming over the fresh green undulating carpet beneath and around you, cannot fail, combined with other objects, to occasion a thrill of admiration in every one. But during the fervid summer heats what a woful reverse is presented! —you almost hesitate to acknowledge it as the same place—so sad a transformation has, in the course of two short months, been brought about. The fields now exhibit a deadly brown lurid hue, as if life were never more to animate them; the very grass becoming so parched and crisp, that you may rub it to powder between your palms—and the bushy evergreens which clothe the rising grounds around powdered thickly with the floating dust!

Paramatta is supplied with water by means of wells, and also by the adjoining rivulet, across which a dam has been placed, to secure it from mixture with the salt water during high tides.—

Justice-of-peace courts are held here weekly, for the examination and adjudication of offences; and also courts of quarter-session and courts of request.

Paramatta government-house was the constant residence of Sir Thomas Brisbane during his administration, who built an observatory in the domain, to further his astronomical investigations.

LETTER VI.

A RIDE of twenty-one miles along a fine road in a north-west direction takes you to Windsor. A coach runs thrice a week thereto from Paramatta. Windsor is situated on the banks of the Hawkesbury (at the head of the ship-navigation), about forty miles in a straight line from its joining the sea, and one hundred at least following the windings of the river, which is fresh for thirty miles below the town. It is a very pretty place, perched at the base of the gradually-rising Blue mountains, which you see towering up in successive ridges, clothed from foot to summit in evergreen forest scenery, until slowly receding from view in the dim and distant western horizon. There is but one street deserving such a name, but the

houses and gardens are built and laid out with taste;—and it contains a handsome government-house and garden; an established church and dissenting chapel; jail; court-house; military and convict barracks; two good inns; and shops where all the wants of the settlers may be supplied. The rich country above it, and the fertile alluvial banks of the Hawkesbury below, render Windsor a place of mportance, and from hence a considerable quantity of grain is yearly shipped.

The village of Wilberforce lies on the opposite side of the Hawkesbury, obliquely to the right, and Richmond on this side of the Hawkesbury, obliquely to the left; both flourishing hamlets, and distant from Windsor about five miles. Twelve miles farther, to the left, takes you to Emu Ford, (whence the old road over the mountains carries you to Bathurst,) the land along this twelve-mile line being exceeding fertile, though subject to the ravages of those destructive floods wherewith this portion of country is occasionally visited. Opposite Emu Ford, is the government farm of Emu Plains, where a great number of convicts, under

magisterial sentence, are employed,—the land here being particularly rich, nearly all cleared, and producing vast crops of wheat and tobacco.

A little above Emu Plains, the Hawkesbury (or Warragamba, as it is here called) emerges from among the mountains, sweeping past the rich and picturesque estate of Sir John Jamison. His veranda'd cottage and farm-buildings occupy a spot near to the bank of the river; but an elegant freestone mansion has lately been erected by him on a commanding site, which overlooks the rich vale spreading wider and wider down the opening vista before you,—the river winding at a sluggish pace through this scene of exuberant fertility, and the abrupt woody range of the Blue mountains towering behind until it steals slowly from your view. A clear cool spring of water is seen welling in the immediate vicinity of the house, a much-prized article here;—while the land around is cleared to the extent of at least one thousand acres, and produces most abundantly all the varied productions of our clime. Sir John is president of the Agricultural Society, and his house the frequent resort

of pleasure-parties from Sydney, who enjoy the unbounded hospitality for which the worthy knight is so celebrated among us.

One of the largest tame kangaroos I have seen in the country is domiciliated here, and a mischievous wag he is, creeping and snuffing cautiously toward a stranger, with such an innocently expressive countenance, that roguery could never be surmised to exist under it,—when, having obtained as he thinks a sufficient introduction, he claps his fore-paws on your shoulders (as if to caress you), and raising himself suddenly upon his tail, administers such a well-put push with his hind legs, that it is two to one but he drives you heels over head! This is all done in what he considers facetious play, with a view of giving you a hint to examine your pockets, and see what *bon bons* you have got for him, as he munches cakes and comfits with epicurean *gout;* and if the door is ajar, he will gravely take his station behind your chair at meal-time, like a lackey, giving you an admonitory kick every now and then, if you fail to help him as well as yourself.

You may proceed up the Warragamba from

hence to a great distance in a boat, by dragging it over the occasional falls and rapids in your way; but few venture on pleasure-parties beyond the Regent's Glen,—a wild romantic ravine on the right, bottomed with huge blocks of stone, among which a little rivulet glides, and is heard to murmur. The sides of the river are lofty, rocky, and precipitous, with trees waving high over head, and an occasional shrub or flower (suspended from the over-hanging sides) starting out from some secret crevice in green and blooming luxuriance. On leaving Sir John's estates, you enter the Bringelly district, skirted by the Blue-mountain range westerly, and extending southerly towards the Cow-pasture river, flowing from the south-east.

Liverpool is the next town in importance to Windsor, and is situated upon George's River, flowing into Botany Bay, about twelve miles therefrom in a direct line, but double that distance following the windings of the river. It lies twenty miles about south-west of Sydney, and occupies a considerable portion of ground, the streets being all regularly laid out in building allotments. It contains a church; court-house; jail; convict and

military barracks; a general hospital, and several good inns and stores; and may muster about one thousand inhabitants. Small vessels come up the river from Botany Bay, and the water here is occasionally brackish in the long summer droughts.

Liverpool is a place of considerable bustle, on account of being the high road to the fertile districts of Airds and Appin, to Illawarra, and to the counties of Camden and Argyle to the south. A stage-coach runs thrice a week to Sydney, the road between being nearly as barren, dull, and uninteresting, as the Paramatta one. Ten years ago, you might have ridden through Liverpool without knowing you were in a *town*, if you passed unnoticed the board nailed upon the tree on which was painted "*This is* LIVERPOOL,"—neither house nor hut being then erected. It is seventeen miles hence to the Cow-pasture river-ford, by which you cross into Camden and proceed onward to Argyle. Beyond Liverpool, the open forest country, in this direction, commences; the land however is generally but indifferently fertile, and more indifferently watered, though affording fine sweet native pasture for the flocks and herds you see browsing on

each side as you advance. Some miles farther, a road strikes off to the left towards Airds, Appin, and Illawarra, three of the most flourishing agricultural districts in the colony; while another, to the right, leads up to the lower portion of Bringelly.—A number of fine cultivated farms and elegant houses of wealthy settlers are seen on each side along this line, among which I cannot help noticing those of Mr. Oxley, our indefatigable surveyor-general. A windmill occupies the high ground above, and a full thousand acres of fine land are spread out between the road and the house. The banks of the Cow-pasture river here are high, sandy, and clothed with goodly gum-trees, swamp oaks, and scrubby brushwood. A bridge is now erecting across it near the ford, the banks being steep, and the river often unpassable in the spring and winter months.

The road towards Argyle runs straight forward from this, over the Razor-back hill; but by turning to the left about four miles, you come to Camden, the great agricultural and sheep farm of Mr. John Macarthur, to whom New South Wales owes so much, as the patriotic introducer of the fine-

woolled sheep-husbandry, from which in fact this colony has derived nearly all the celebrity it now enjoys. New South Wales and Merino wool are so intimately associated, that I never spoke of the first to a stranger but he started the subject of Merino wool immediately after as a sort of matter of course. It is this product alone which has mainly elevated the name of the colony, from being considered as merely appertaining to the reservoir for all the criminal feculence of England, to the proud station it now occupies. The cottage and out buildings occupy a rising hill about half a mile from the river; a small stream, with ponds at intervals along its bed, stealing quietly through the narrow hollow you have to cross in reaching the house. Mr. Macarthur's property in this county in grants and purchases exceeds thirty thousand acres, all lying contiguous, and consisting chiefly of undulating, thinly-wooded hills covered with a sward of fine dry native pasture, with alluvial plains towards the margin of the river of the most fertile description, producing wheat equalling in quality and quantity the best in England, and maize of the most luxuriant growth.

About four hundred acres adjoining the river were originally clear of timber, and being intersected with ponds, having no ready outlet for the discharge of their waters, this portion was always considerably flooded in every heavy fall of rain, and the whole bore much the appearance of a rich English meadow. Here a herd of wild cattle (originating from a stray bull and two cows) was first discovered by a runaway convict, and backwards from this the largest herds are still found. It was this circumstance which suggested to the acute mind of Mr. Macarthur the idea of selecting a grant here,—conceiving that cattle, being the best judges of their own food, would naturally graze upon the land which produced it in greatest abundance and most suitable to their taste. A forty miles' remove from Sydney, through a line of country where no human habitations were then fixed, was, in those days, counted such a piece of thoughtless boldness, that some pitied and most laughed at Mr. Macarthur, for taking the step: but perceiving ere long the rapid increase of his stock in these fine pastures, where all had free range of food without being crippled by a neigh-

bour's encroachments,—they soon saw it was true wisdom on his part, and that the *folly* rested only with *themselves.*

It was while ruminating deeply on the future prospects of his adopted country, that Mr. Macarthur was led to conceive the Merino sheep-husbandry as peculiarly suitable to it. He knew that in order to *import,* it must *export* too; and what that export should be, became the matter of consideration. Its natural productions afforded no hopes of realizing his wishes on that head, and towards artificial resources his views were therefore directed. He considered what England could *not* produce, and what this country *could.* Almost all England's great wants he saw provided for, either within her own territory or that of her other colonies, *excepting* the article of fine wool, for which she had to depend upon a foreign country, and that country her enemy. This decided the point. Here, he saw, was an article which neither England nor any of her other colonies could produce; and its cultivation (while it did not enter into hostile competition with any of the home or colonial productions of Great Britain) would

place her independent of the precarious resource of *foreign* supply. The fine, dry, pastoral nature of the country,—wherein he saw the coarsest fleeces sensibly ameliorated,—all tended to confirm him in his resolve; and we now reap the valuable effects of his sound reasoning and discernment.

From three ewes and a ram, with which he began the breed, his stock of pure Merinos exceeds now two thousand, and from their produce he has sold upwards of forty rams annually, these many years back, at an average of 17*l.* sterling per head, besides improving his other flocks by crossing, until many of the cross-breds are quite equal to the pure bloods. Mr. Macarthur has been for some years experimentalizing to increase both the quantity and quality of his fleeces, by selecting the largest and finest ewes and rams, and keeping up a distinct breed therefrom; and there can be no doubt that this experiment, founded on sound deductions, will prove eminently successful. All breeds naturally deteriorate at first in a new country, because we look then more to numbers than individual value; it is only when land becomes more valuable, and capital accumulates, that people find their in-

terest in attending to the amelioration of the breeds.

Neither has the breed of horses and cattle passed unnoticed by Mr. Macarthur; his cattle partaking much of the Devon peculiarities, being mostly of a deep red with large spreading horns, and appearing to answer this climate particularly well, from being hardy feeders; fattening easily; giving a good supply of milk; and standing well, as working oxen, the fatigue of farm labour.—A thriving vineyard is seen planted upon the face of a rising ground, with an eastern exposure, from which a progressive quantity of wine is yearly making; while a patch of the various English grasses, cultivated in rows for seed, occupies a site nearer to the river. An excellent pack of fox-hounds are also kept here, affording much enlivening sport when opening in chorus after a native dog. You command a very extensive and delightful view from some of the rising grounds, the numerous cleared farms on the opposite side of the river, in front and to the right, presenting a picturesque and most exhilarating appearance, while to the left you behold Kirkham, the residence of Mr. Oxley, (which you had previously passed,) and the va-

rious thriving farms in that neighbourhood. This view will give you an idea how interesting the appearance of this country will be when the native woods have been hewn down, and cultivation has extended and enriched the beauty of our prospects; the general undulating surface, to the outline of which a suddenly rising hill here and there imparts a bolder tone, being bounded, at distant and irregular intervals, by abrupt woody ridges of moderate elevation.

A number of enterprising settlers, possessed of both wealth and respectability, have located themselves in various parts of this country farther south; while a thriving settlement of an humbler description, from the class of convicts, occupies a station farther still, across the Bargo river, a small branch of the Cow-pasture.—A road passes to Argyle also, but it is nine miles farther than that across the Razor-back. You see Mr. D'Arrieta's, as you ride along, on your left, (about five miles off,)—a happy, good-humoured, hospitable Spanish gentleman, who settled some six years back in this colony: but take care how you approach his mansion!—for, being of a military turn, he has, by way of pro-

tection from burglars and bush-rangers, drawn a regular chain of videttes around it, in the shape of fierce growling devils of dogs, pegged down to the ground at such exact mathematical distances, that two can just meet to lick each other's faces, and pinch a mouthful out of any intruder's hip; and as they are no great respecters of persons, you had better "sound your horn" as you approach, to draw out some of the inmates to a reconnoitre and parley, before venturing in,—unless you are heedless about having your coat-tails pulled off. Mr. D'Arrieta's grant consists of two thousand acres, all fine fertile land, stretching along the river, the banks whereof are here so deep and precipitous, that there is only one solitary spot upon his grounds where cattle can approach to drink. Dr. Douglas's farm, of eight hundred acres, lies immediately adjoining, a large portion of it being cleared and under cultivation. The farms of Major Antill, Messrs. Crawford, Harper, Cowper, and various other gentlemen, lie beyond—all possessing the requisite conveniences, and considerable portions of cleared ground, with flocks or herds pasturing upon the remainder.

Camden county contains two romantic, singular spots;—namely, Illawarra, on the sea-coast, and Barragorang, at the base of the Blue mountains. Illawarra, or the Five Islands (fifty miles south of Sydney), lies between the end of the Merrigong range, running through Camden, and the sea—the range hemming it so closely towards the Sydney side, that you have to crawl in a manner down the precipitous edge of the mountain to it, drawing your horse gently after you; for you dare not well attempt to ride. A cart-road consequently will never be very practicable here: nearly all the produce, therefore, must necessarily be transmitted to Sydney hereafter, as now, by means of boats. The moment you reach the foot of the mountain, an entire new scene opens upon your view, the country being quite distinct in its general features, as well as in the trees, shrubs, and even birds it produces, from any thing you have before seen in the colony. The tall fern, cedar, and cabbage-trees; the numerous creeping vines, climbing up and throwing their fragrant tassels of flowers downwards from the tops of the less lofty trees; the luxuriant growth of every vegetable product;

with the red-crested black cockatoos, and large-crested blue pigeons peculiar to this district, make you fancy yourself transported to some far-distant tropical region; to which the temperature, as well as the general features of the spot, bear a much closer resemblance than to the moderate latitudes wherein it is placed. The extent of cultivatable ground is but small, and it is likewise exceeding closely timbered; but the timber being generally cedar, pays well for the cutting down, while the soil yields most abundantly all our colonial cultivated productions—a number of settlers being here located.

Barragorang is a long narrow valley, hemmed in again between the Merrigong range and the Blue mountains, with only one pass down into it, and that also a very precipitous one. It runs north and south, along the banks of the Warragamba, and consists of a stripe of rich soil matted with the finest native herbage, and most picturesquely variegated, with high rocky precipitous mountains hanging frowningly on each side over it—green bushes waving out here and there from their rugged declivities. These heights shut out both the early

rays of the rising and the lingering rays of the setting sun,—by which means this beautiful vale is rather destined to be one of gloom than of pleasure. Though not answering well for cultivation or sheep pasture, on account of the deficiency of sun, yet cattle thrive amazingly here,—it is however remarked that their inside appearance never proves equal to their outside show on their coming under the knife of the butcher.

The thriving and fertile districts of Airds and Appin are situated in the county of Cumberland, immediately beyond the Cow-pasture, looking from Camden. They are chiefly occupied by small settlers, who have been originally convicts, out of many of whose hands the grants are slowly passing through the thoughtless, spendthrift conduct of the occupants. Their soil is usually a fine stiff clayey loam, well adapted to the cultivation of wheat, whereof large quantities are raised, and the country certainly looks most luxuriant and beautiful when cleared. But it has an important set-off against its great fertility, in the scarcity of water which prevails, most of which is derived from the rain collected and retained in the clay-ponds. Even

the capital of the township, Campbell-town, has not a pool near it worthy the name.

The general superficies of the county of Cumberland is undulating; but in Camden these rising grounds come nearer the description of small hills, while the Merrigong range, extending through it, branches occasionally off laterally into inferior ridges, from which others of still smaller dimensions again shoot out. These ridges almost uniformly rise upwards like the roof of a house, and where the country is mountainous, meet so close to each other at the base, as to leave only a narrow ravine for the rain-torrents to rush along. The rivers, again, have high and steep banks, excepting low down upon the Hawkesbury, and run a very tortuous course, blocked up often in their way by trees fallen into their channels. This conformation of the country and rivers is one of the great predisposing causes to the terrible floods with which the former has so often been inundated. The surface of the hills is crusted by the long droughts which usually precede the floods; and hence the rain runs off without any material portion being imbibed, and rushes down the sharp declivities of the

ridges into the narrow gullies, whose streams—augmented in mass and impetuosity by the successive pourings into them—increase and urge thus the body of water onwards, till (gully terminating in gully)' all concentrate in the main branches conducting to the river, into which they now plunge themselves with resistless force. Here again the tortuous course of the river, and the fallen trees, check the flow of the rising waters towards the sea; while the narrow channels and high banks keep them from spreading out, until, overtopping these, they sweep over the adjacent country. These calamitous floods, however, are now rapidly passing from the memory of the colonial inhabitants, none of material importance having occurred for many years,—the highest and most destructive, in March, 1806, having risen ninety perpendicular feet, and caused such desolation, that wheat rose to 4*l.* per bushel, and bread to 2*s.* 6*d.* per pound: while, for a bushel of seed maize, at sowing time, 7*l.* hard cash were gladly paid down. This is the time still facetiously spoken of by the old colonists, when the good lady of the governor kept open

table for all the *respectable* inhabitants, only jocosely inculcating upon them at this period of starvation, to mind and bring their ration of bread in their pockets when they came,—if some stray mouse had not already *whetted* its appetite therewith.

LETTER VII.

ARGYLE is about sixty miles long, and averages twenty-five broad. It runs south-westerly, and its nearest point to the sea is twenty-five miles. From the Cow-pasture river, dividing Cumberland from Camden, to the entrance of Argyle, is forty miles in a straight line, the road proceeding in a direction a little westerly of south, through Argyle, toward Lake Bathurst, which is about one hundred and twenty miles from Sydney in a straight line, and from twenty to thirty more, possibly, by the sinuosities of the road. You are every now and then rising and again descending on the route, yet actually ascending *all the while*, though in such a gradual manner, that you are not aware of it.

The county of Argyle is composed of tolerably high and extensive ridges, ramifying in various

directions, with swelling hills and irregular plains, and valleys between. Two extensive brushes are crossed in your way, namely, Bargo Brush, about twelve miles in the interior of Camden, and Wombat Brush, in the interior of Argyle. These brushes, when clear of vines, are generally composed of wretched barren soil, totally unfit for grazing, scarcely worth clearing. The remainder of the county commonly affords tolerable pasture, while many spots of large extent are found well adapted to all the purposes of agriculture. But, speaking in a general way, I would say, from my own observation, that for one acre of good cultivatable land, there are from forty to fifty acres fit only for pasture, or utterly worthless. I speak of the country from Bargo Brush to beyond Eden forest, in the heart of Argyle. But there is really no calculating what the soil here will produce, as I have seen a high-lying granite *detritus* soil, in Eden forest, so hard as almost to require quarrying, with straggling tufts of grass spread sparingly over it, produce from thirty to forty bushels of wheat at a second crop with but a double sheep-folding and indifferent pulverization. When broken up,

and exposed to sun, air, and moisture, it gradually crumbled down, and became a fine easily-cultivated soil, bearing as good vegetables, with a sprinkling of manure, as I have any where seen.

There is a made bush-road from the Cow-pasture river to Lake Bathurst, but carts have proceeded by a *natural* bush-road as far as the Morrumbidgee river, forty miles beyond this, which is the main branch of the Lachlan river, falling into the interior westerly marshes discovered by Mr. Oxley; therefore, carts can with tolerable ease cross the dividing range at this point, too, as well as toward Bathurst.—A *made* bush-road is one where the brushes have been cleared, banks of rivers and gullies levelled, and trees notched, on the route, and cuts made on the faces or tops of hills when necessary, the remainder being all left in a natural state; while a *natural* bush-road signifies one to which nothing has been done except notching the trees, the carts simply following each other's track. Besides the two brushes, the road passes also two ranges, the first the Merrigong range, in the middle of Camden, and the second the Mittigong range crossing the middle of Argyle,—neither very lofty. Argyle is watered by the various branches

of the Hawkesbury and Shoal-haven rivers, besides a number of small rivulets and ponds, containing water all the year round, so that it is pretty well supplied on this head. Sutton and Eden forests, and Goulburn plains, are the most noted agricultural or pastoral spots of any extent in Argyle, the land adapted to agriculture lying usually in patches with a great extent of indifferent country around. There are few resident settlers in Argyle;—Mr. Atkinson at Oldbury, in Sutton forest, and Mr. Throsby, junior, being the most considerable; the remainder consisting chiefly of the class of convicts, holding *small* locations, the greater portion of the country being still occupied as stock-runs by proprietors in the county of Cumberland, or residents in Sydney. The cattle and sheep, when fattened here, are driven slowly down, and either disposed of, at Sydney, to the government, or to butchers, or kept upon some farm in the vicinity of Sydney, and sold off as a demand occurs. In this county, you have several excellent samples of that singular appearance sometimes presented by the land in its state of nature, exhibiting, as you would suppose, the most striking evidences of former cultivation, in the regularly laid-out

ridges, apparently produced by the plough, which here and there intersect your path. I have seen twelve at least of these ridges, all contiguous, and extending in length for two hundred yards and more, so evenly proportioned, that I do not think above a foot difference would have been detected in any of their breadths, while I could almost have protested that I could perceive the very plough landings, and count their number in the ridges, which are usually about ten or twelve feet broad. The same singular appearances are more plentifully and strikingly portrayed at Bathurst and at Hunter's River. They occur always on gentle declivities, where there is a tenacious sub-soil with loose super-strata, and are doubtless produced by the rain-torrents; but how this great regularity in their breadth is effected, is a problem of difficult solution. Here, too, I have witnessed upon the tops of ridges extensive beds of water-sand and water-gravel, mixed with fragments of shells, presenting the identical appearances you will observe by the banks of rivers, or upon sea beaches,—forcing upon you the belief, that these ridges had been originally the beds of rivers, or of the sea, which

some great internal convulsion had heaved up and converted into dry land.

Though Argyle abounds with timber, yet, the trees being generally more distant from each other than in Cumberland, the stems are consequently shorter, from the branches spreading early out, as has been elsewhere mentioned. Good timber for fencing and house work is therefore scarcer than in Cumberland; but then, here the settler possesses a great advantage in having so few trees upon an acre to clear, in comparison to what he has in that county:—indeed, in several places, such as Goulburn plains, there is a goodly proportion of land without a single tree, while in other parts, such as Eden forest, these are so sparingly scattered as to resemble more a nobleman's park, than a natural forest, all self-sown.—It is really delightful to ride through these open spots, where there is scarcely a tree you would wish to see cut down, so much do they beautify the prospect;—while, if a kangaroo or an emu should start up in your path, you enjoy a clear and animated view of the chase, until the dogs finally surround and seize upon their victim.

The farther extremity of Argyle is about one

hundred and twenty miles from Sydney in a direct line, immediately beyond which we find Wellington plains, and to the right Brædalbane and Campbell plains—all fine pastoral vales and downs, clear of timber, and long occupied as grants or stock-runs.

Lake Bathurst and Lake George are situated here; the former about one hundred and twenty-nine, and the latter one hundred and twenty-five miles direct from Sydney, nearly south-west; Lake Bathurst being sixty miles inland from Jervis Bay, the nearest part of the coast.—Lake George is about fifteen miles long and five broad, while Lake Bathurst is from three to five miles in diameter. Both are formed by drippings of the rains from the contiguous mountains; and being mere reservoirs, without outlets, are consequently subject to great increase and decrease, according as wet or dry weather prevails,—sometimes overflowing the surrounding country, and sometimes far contracted within the customary limits. Their waters are pure; and in Lake Bathurst an animal, bearing some affinity to a seal, as far as could be discerned of it, has been frequently seen, and once or twice fired at, though without effect. It seemed to be

about three feet long, and appeared above water every now and then, puffing strongly from its nostrils. The natives call it "Devil, devil!" as much as to say, It is an evil spirit,—for knowing devil to be the name of a bad spirit with us, they so denominate, in speaking to Europeans, all which they consider malevolent beings, whatever their native names may be.

Lake George is near to the summit of the range dividing the eastern and western waters, being but about twelve miles from the south Fish river, a branch of the Lochlan running into the great interior marshes.—Beyond this lake is the fine open forest of Argyle, and stretching on south-westerly, beyond the dividing range, much good grazing forest land and downy open country are passed through, until you reach Monaroo Plains. These are most extensive downs, clear of timber, which, from their fertile limestone soil, seem well adapted for all agricultural purposes, while their great elevation and southerly latitude must give them a cool climate, every way suited to European constitutions.—The farthest explored part of these downs is about fifty miles in a direct line inland from Two-

fold Bay near Cape Howe, (two hundred and forty miles south from Sydney,) and about forty miles inland from Barmouth Creek. It is probable that on farther examination they may be found to run still closer to the sea; yet, as they are beyond the dividing range, it may possibly prove difficult to cut a road from Twofold Bay thereunto, until which shall be done, it is evident they can never be available to settlers other than as distant stock-runs; for, to be truly useful, they must communicate with the nearest good harbour on the coast. The portion of the country immediately beyond Lake George has been occupied as grants, or stock-stations, for some years, the farthest station being about one hundred and sixty miles from Sydney in a direct line; while again toward the sea, on the eastern side of the dividing range, settlements have been formed within thirty miles of the sea. At the branches of the Shoal-haven river, there is a fine limestone, well-watered portion of country named Jackawa, where Lieutenant Futter, R. N. and Mr. Reid, surgeon, R. N. two active magistrates and settlers, have been some years fixed.—Jackawa is one hundred and ten miles from Sydney in a direct

line, and only forty from Jervis Bay, to which Mr. Throsby long ago proceeded, and found that a road might be easily made. Carts pass readily from Sydney to Jackawa, and from thence to Lake George and Monaroo Plains; so that by cutting a road from Jervis Bay to Jackawa (forty miles) and from Twofold Bay to Monaroo Plains (fifty miles), these fine portions of country would thus have a direct communication opened with the sea, which would not only materially contribute to their present importance, as stock-runs to the colony, but make them most desirable places for English emigrants to fix upon, so suitable are they, in climate, good untimbered soil, and abundance of limestone, to all the purposes which an agricultural population can desire.—Until such roads are made, however, these rich and extensive tracts can never rise into wealth and importance; and that such roads *will* soon be made, we have every reason to hope, under the present administration.

From Cape Howe, immediately beyond Twofold Bay, to Wilson's Promontory, in the middle of Bass Straits, a distance of two hundred and sixty miles, there is no anchorage for vessels, neither is

the interior of the country (to seaward of the dividing range) known; while, from the extreme point of Wilson's Promontory to Western Port, farther on (or southerly) in these straits, the distance is one hundred and twenty miles. Messrs. Hovell and Hume passed interiorly from Twofold Bay along to the westward of the dividing range, (which reaches here within forty miles of the sea, as at Sydney,) till opposite Western Port, where they crossed and proceeded to that place, travelling through beautiful, well-watered, and thinly timbered lands, covered with fine herbage, and having a soil fit for raising all kinds of grain suitable to the climate. Of the land about Western Port they spoke in raptures, and their accounts are fully corroborated by those of subsequent visitors; the following, from a Van Dieman's Land paper of May 20th, 1826, being the fullest I have seen.

"Aware of the public interest which this spot has lately excited, we have taken the pains to collect every information respecting it which could be relied on. Of these, the most copious as well as the most authentic is that supplied to us by the

kindness of Mr. Smith of the Caledonia. A sojourn of twelve months upon its coasts, enabled him to describe it with confidence. Western Port on the south coast of New Holland, appears to have been so called, from its situation to this island, being nearly two hundred miles to the N. N. W. of Port Dalrymple. From that port across the straits to Wilson's Promontory, is about one hundred and twenty miles. The peninsula, of which this last forms the extremity, is the most southern land of New South Wales, and is connected to the main by an isthmus formed by an inlet of the sea on the east, and the mouth of a river on the west. From this point to Western Port, the coast stretches along in a westerly direction round Cape Liptrap, about sixty or seventy miles, bounding an extent of country described as the finest ever beheld, and reaching apparently about forty miles to the foot of a very lofty range of mountains running parallel with the coast. In parts it resembles the park of a country seat in England, the trees standing in picturesque groups to ornament the landscape. The timber is mostly the same as in this island, but some of the species in that genial climate

attain greater size and beauty. In other parts the eye roams over tracts of meadow land, waving with a heavy crop of grass, which being annually burned down by the natives, is reproduced every season. In these situations large farms might be cultivated without a tree to interrupt the plough. Various fresh-water lagoons lie scattered on the surface, and about eight miles up the Western river, a branch-stream emanating from the mountains intersects it. A second tributary stream falls by a cascade into this latter about five or six miles up, navigable by small vessels, where Mr. Smith thinks it would be an eligible situation for a town. It would be presumption in us to hint to His Excellency Governor Darling (whose admirable and provident administration precludes almost the possibility of a mistake), the necessary caution in bestowing such grants to settlers as may not interfere with future townships or other public reserves; and we trust that this enviable expanse, comprising upwards of two hundred thousand acres of land will not be allowed to be engrossed by any large company or monopoly, but will be distributed in smaller portions to individuals, consistent with the

population which it is calculated and likely at an early period to support. We trust, also, a strong injunction will be laid on every settler to abstain from all aggression or insult of the natives, who are described as a stately healthy race, easy to be civilized. Their huts form villages of forty or fifty, and one was seen built in a superior manner, with a doorway and two windows. But this fine tract is not all. The mouth of the great river is about thirty miles wide. An island called Philip's Island occupies the centre, stretching about thirteen miles, leaving an entrance at each extremity. From the headland of the main lying in about 38° 32 S. and 145° 28 E. a reef runs toward the island, leaving a narrow entrance for ships, but hazardous to one unacquainted with the passage. The western entrance is however safe and commodious for vessels of any burden. The best course is to keep within half a mile of the island on the starboard side, which has a sandy beach called Grant's Rock at the western extremity. This is the more necessary, as a reef runs out some distance from the main. About four or five miles up is a sand-pit, and having rounded the island, an immense space of

water opens to view, and another island of equal extent is seen about six miles higher up. At ebb tide a great many shoals appear, or muddy banks covered with swans, which live on a delicate grass growing on the flats. They lay their eggs on the sand-banks, which are gathered in great numbers, and are by no means unpalatable. The sealers usually anchor about twelve miles up; five miles beyond is a point of fuller's earth. Proceeding up the western channel, and opposite the second island, is another large tributary stream, flowing through a level country of fine pasture land, lightly wooded, and formed into a peninsula by Port Philip, about fifteen or twenty miles farther to the west. Mr. Smith met with a fine lagoon in the centre of this tract while hunting kangaroos, which he found very numerous. Both the islands consist of good land, but the upper one is rather thickly wooded. The vegetable mould rests on a stratum of clay of fuller's earth, and appears to be the deposit which this valuable river (as yet but partially explored) has washed down from the higher grounds. The natural produce of hay is astonishing, and various productions would, independent of agri-

culture, be a source of profit to settlers. The seal and swan skins are no trifling item, to which we may add the wattle bark, which is every where abundant, to say nothing of the gum which exudes from it. A species of tea-tree differing from that in this island is common. The infusion of its leaves affords a most excellent beverage, and its bark, like that of birch, being of a white peeling texture and possessing a greater quantity of tannin than even the wattle, would no doubt, from its absence of colour, be highly prized by the London curriers. A species of lignum vitæ is also indigenous there. Fish in the highest perfection swarm among the rocks; some of the mullet and salmon when smoke-dried are nothing inferior to the haddock of East Scotland. Mr. Smith proceeded about fifteen miles beyond the upper island, where the channel of the main stream began to diverge into various other smaller streams branching through the interior."

Western Port is situated ninety miles within Bass Straits, as you proceed from England, so that one good day's sail would take a vessel out into the open sea, while fifteen more would carry her

past Cape Lieuwin into the trade wind, to enable her to proceed by this route to India, Batavia, Isle of France, Cape of Good Hope, or England. Western Port is four days' sail from Sydney; but the winds blow so generally south-westerly here throughout the year, that the *return* passage through these straits is on an average three times as long as the *outward* passage; and indeed during the southern winter solstice, these south-easterly winds blow through Bass Straits as strong as if through a funnel, and round the south cape of Van Dieman's Land as powerfully as is experienced on turning the corner of a house; so that ships from Sydney to India are obliged, during these months, to hazard the dangerous passages through Torres Straits or round New Guinea, (where a fourth of them are generally wrecked,) from the utter impossibility of making the voyage through Bass Straits or round Van Dieman's Land at this period. Nay, even in proceeding to the Cape or Isle of France at this time, they must pursue the same route, which is just like a vessel from Plymouth sailing round the north of Scotland on a voyage to Lisbon. The chief difficulty

is, to get through Bass Straits; when once you are through these, you will experience about as favourable winds during your voyage as you generally get through the other parts of the year. I was once detained for three weeks within a few days' sail of these straits, on a voyage outwards, by *north-easterly* winds, during the period when vessels could not pursue their voyage homewards this way on account of *south-easterly* winds prevailing toward Sydney. It will be easily seen, that a wind must necessarily have greater power in blowing *through* a strait than at either end thereof, as is manifested by observing what occurs in a milldam: when the sluice is opened, you see the water pent up and almost motionless a little way on in the dam, while *through* the sluice it rushes with resistless impetuosity. Such is the case with the south-east wind through Bass Straits; it is checked in its progress by the great continent of New Holland, on one hand, and by Van Dieman's Land on the other; suddenly repelled, it takes a slanting direction along their coasts, till, finding a free vent through Bass Straits, and round the southern extremity of Van Dieman's Land, it sweeps for-

ward, increasing in velocity in proportion to the diminished resistance *before* and the increasing pressure *behind*. When fairly through Bass Straits, vessels, by keeping near to the land, have generally land-winds during the day and sea-breezes in the night, or *vice versa*;—both favourable. What eminent commercial advantages, then, does not Western Port hold out,—not to speak of its fine, cool, salubrious climate, and thinly-timbered pastoral soil; its situation thus enabling vessels to sail to every part of the world, at every period of the year, by the shortest and safest routes—and those with half-cargoes for England to call at the Isle of France, or the Cape, where they discharge the provisional lading they might have taken here by way of making the most of the empty space!

Twofold Bay possesses good anchorage, protected from all winds excepting those from the eastward; but a cove on the left affords perfect shelter to several small vessels from *every* wind, and to several large ones, also, by mooring therein. There is abundance of fresh water around it, and the country is a fine open forest, well matted with grass, though rather hilly. In

Jervis Bay, there is also good anchorage and plenty of water, but the land is inferior to that around Twofold Bay. Twenty years, I hope, will show a chain of settlements connecting Sydney with Western Port, and a good cart-road to travel the distance by, which is nearly four hundred miles, as the crow flies.

King's Island, in the middle of the entrance to Bass Straits, also appears a good spot for locating on. It is distant about two hundred miles, each way, from Port Dalrymple, on the right, and Western Port, on the left; is about sixty miles long by thirty broad; well watered by rivulets and ponds, and having a thirty miles' extent of land thinly timbered and well adapted to all agricultural purposes. The information regarding this island rests on the authority of an old man named Robinson, who had lived upon it for thirteen years, cultivating a farm that produced him excellent crops of wheat and vegetables, but which he was forced to abandon on account of the bands of runaways from Van Dieman's Land, who came there in boats and plundered him. Fish and kangaroos, he says, abound there, but the latter were decreas-

ing fast by reason of the dogs which had been left by the sealers breeding and overrunning the country. He had located himself, of his own accord, upon this delightful island, on account of the fine quality of its soil and climate, and here he meant to have ended his days in solitude, had not the runaway ruffians forced him to desert it.

LETTER VIII.

THE settlement of Hunter's River, to the right, or north of Sydney, is divided at present into the counties of Northumberland and Durham, the first lying between the Hawkesbury and Hunter's rivers, (the distance between which is fifty-five miles,) and the second lying to the north, *beyond* Hunter's River, and stretching upwards along its bank; but the limits of neither are yet properly defined.

By land, you proceed either by way of Windsor or Richmond. From Windsor to Patrick's Plains, on Hunter's River, is a distance of seventy miles in a direct line, but nearly of ninety miles when following the convolutions of the road, which is, as yet, but a rugged bridle-path over the mountainous ridge called the Bulgar, quite unfit to take

even an empty cart by. Patrick's Plains, again, are twenty miles from Wallis Plains, the head of loaded-boat navigation, and forty miles from the town of Newcastle, at the outlet of Hunter's River on the sea-coast. By the circuitous route of Windsor, therefore, Patrick's Plains are upwards of one hundred and twenty miles from Sydney; but a practicable route for a road has been surveyed direct from Paramatta thither, which will reduce the distance to Sydney upwards of thirty miles, crossing the Hawkesbury low down by a punt. A fine little cutter packet, named the Lord Liverpool, sails weekly between Sydney and Newcastle, (in distance seventy-three miles,) twelve hours' easy sail, cabin fare, (including provisions, wine, and spirits,) 1*l.* 6*s.*, and the accommodations excellent, the vessel having been formerly a pleasure-yatcht in India. Several other craft pass backwards and forwards between the two places, also, as irregular traders, all taking goods on freights, the principal return being coals,—Newcastle supplying the Sydney market with that necessary article. Two passage-boats ply between Newcastle and Wallis Plains, conveying goods

upwards, on freight also, which goods may be there secured in a safe store appertaining to Messrs. Powditch and Boucher, on payment of a small commission. There is only a bridle-road as yet between Newcastle and Wallis Plains; but a cart-road, which is now in progress, will ere long be completed. The distance by land I have already stated at twenty miles, but on account of the convolutions of the river it amounts by water to nearer seventy. Close to these plains, indeed, there is a part of the river so tortuous, that although the distance between the two points (that is, between Lieut. Close's wharf and Powditch and Boucher's wharf) be but three miles by land, it is twenty-five miles by water. In freshes, boats can go no higher than Lieut. Close's, and this being a high-lying dry place, and abounding in fresh water, will doubtless eventually be the situation pitched upon for a town. Carts, therefore, must be sent hither from Newcastle by water until the road be completed; but from Powditch and Boucher's store, loaded drays may pass up the banks of the river for seventy miles farther at least, crossing to the right bank at Mr. Singleton's ford, head of Pa-

trick's Plains, the country beyond this being too rugged on the left bank to admit of carts proceeding much higher on that side. When the made road from Newcastle to Wallis Plains is finished, an excellent cart-road might, by the employment of a gang of twenty men for a fortnight or so, be completed, upwards, to full ninety miles distance from Newcastle; the country being generally so even, so thinly timbered, and clear of brush, that the banks of a few rivulets and gullies only require to be lowered, or bridges thrown across,—nature having done all the rest. But the road, even as it is, cannot be found much fault with, there being only two or three difficult gullies, which require, in crossing, a partial unloading of the drays.

Newcastle is distant about one hundred and twenty miles from that extensive pastoral country, Liverpool Plains; and after the road from Newcastle to Wallis Plains shall be completed, a stage-coach might be driven that distance (by a cart-road of fourteen miles only near Liverpool Plains) without much inconvenience, so easy of communication is this part of the country.

Liverpool Plains lie immediately beyond the mountain range dividing the eastern and western waters, the range here making a sudden interior or westerly bend toward the sources of Hunter's River, and thus enabling the latter to collect its waters in a straight westerly line of one hundred and forty miles. Hunter's River thus takes its origin at the base of the dividing range near Liverpool Plains, to the north-west of Newcastle; and, assuming a north-east course, is joined by several smaller streams, till reaching Twickenham Meadows, its current runs direct south for about fifteen miles, when, joined by the Goulburn from the westward about eighty miles from Newcastle, it bends suddenly due east, and runs onward in this direction, meeting with Williams's and Patterson's Rivers from the north twenty and fifteen miles above Newcastle, at which place it falls into the sea.

The settlements in this district are formed on Patterson's and Williams's Rivers, to the right as you proceed up, and along the main stream of Hunter's River, to one hundred miles distance from the sea. These settlements are among the most

respectable of the colony, the great bulk of the proprietors consisting of military and naval officers, or free emigrants. The alluvial banks of Patterson's and Williams's Rivers are heavily timbered, but the forest land behind is open, grassy, and every way suitable for pasture without cutting down a single tree. An estate of one thousand acres here, in a very trifling degree improved, was lately knocked down at public auction, in Sydney, for 580*l.* or 2680 dollars, ready money.

Newcastle occupies the extremity of a peninsula running into the sea commencing from the main land in a low swampy neck which gradually swells out at the extremity into a rising ground of moderate altitude, over the front of which the town creeps up, the streets running upwards and across its face, and a government windmill occupying the crown, and overlooking the harbour, sea, and the flat land between and the main. Few except the government houses are worthy of much notice, being chiefly small detached cottages of brick or wood, presenting no very imposing appearance; but, from the thriving settlements upon the banks

above, the attention of our merchants has of late been more particularly directed to Newcastle, and wharfs and stores are now in progress, to facilitate and extend its rising commerce. The entrance to the harbour is narrow, but the channel deep enough for large merchant-ships; its crookedness however renders it dangerous for any but cutters or schooners to work in and out through it. A high round precipitous island, called Nobby's Island, is situated at the entrance, toward which a low reef extends from the south shore with a breakwater of loose stones upon it, to protect the anchorage from the seas that break over in the southerly gales. Nobby's Island forming a sure defence against attacks by sea, whilst a battery on the crown of the hill above the town would command all the low isthmus and harbour around, Newcastle might very easily be rendered impregnable, should occasion require. It possesses a great advantage over most of the other colonial ports in the quantity of excellent coal wherewith the surrounding country abounds; inasmuch as vessels are always sure of a return cargo. The coal shaft is sunk upon the summit of the hill, and the coals carted down by

bullocks; but from the defective nature of the working, and the lazy habits of the *incorrigibles* who are sentenced to this labour, the produce does not at all correspond with what may be expected when a more efficient system is introduced.

Newcastle contains two government houses; a jail; military and convict barracks; a hospital; two tolerable inns; and an episcopal church. It is under the jurisdiction of a half-pay military officer, denominated *commandant*, but whose functions merely extend to the superintendence of the government works, and the general police of the town, in his capacity of a colonial magistrate, wherein he is aided by the assistant surgeon of the hospital, who has been recently appointed to the magistracy also, in order that a bench may readily be formed when more heinous offences come on for investigation—the power of a single magistrate being now very limited. Two passage-boats, as I before stated, ply regularly between Newcastle and Wallis Plains; but, from the tediousness of the navigation, it is customary to despatch only your baggage by them, and to proceed to Wallis Plains by land, a plain beaten path leading thereto

through the woods along the left bank of the river, out of which you cannot easily wander.—The country is low and swampy for a considerable distance on this route, consisting at first of a poor washed clay or light sandy soil, covered with stunted brush; but as you proceed, spots of great fertility present themselves, generally well watered, but so thickly timbered and brushy, that very few individuals have as yet been induced to settle upon this line. There is a government-house at Wallis Plains, and a guard-house with three soldiers is fixed here too, for receiving and securing prisoners previous to forwarding them to Newcastle jail.

Wallis Plains are of no great extent, and being originally densely wooded, required great labour in clearing; a disadvantage, however, amply compensated by the amazing fertility of the soil, which is all alluvial, and still subject to being covered with water during the high floods. The ready communication by water-carriage to Newcastle likewise, and the regular weekly packet communication again from thence to Sydney, contribute to render land here extremely valuable. The country back from the river consists of rising

hills of inferior soil, with fertile flooded vine brushes, watered by lagoons communicating with the river. These lagoons swarm with the most delicious fish; and during the dry summers, when the water is low, the natives wade in and actually drag out *cart-loads* thereof, including immense eels. A deep rivulet runs through the Plains, over which you cross in a ferry-boat, and proceeding along its banks, toward the main river, past various houses and small farms belonging to poor settlers, you come to Messrs. Powditch and Boucher's store, before mentioned, where a good supply of all sorts of merchandise is kept.

Small settlers (chiefly those who had been transported to Newcastle when a penal settlement) occupy patches of ground along the alluvial banks of Hunter's River, for about a mile onward, when you come to a thick vine brush of the richest soil, through which the road winds, the ground becoming firm, and the country beyond it of the open forest description. No road has been either cut, or measured off, on this line yet, the carts following each other's track:—a few difficult gullies, and a rather steep hill (Iron-bark hill), intervening between

Wallis and Patrick's Plains, to diminish the claims of this route to the designation of an excellent natural road. The country is undulating as you proceed, tolerably watered, and well adapted for cultivation or pasture, various respectable settlers being fixed to your right and left at irregular intervals. From the rising grounds you have occasional fine views of the picturesque scenery on each of the banks, and occasional glimpses of the houses and cleared grounds of the settlers, among which the farms of Messrs. Winder and M'Leod, to your right, are peculiarly worthy of notice. Mr. Mudie's is the first of several excellent farms you reach upon Patrick's Plains, and consists of above two thousand acres of the most fertile soil, the greater portion naturally clear of timber. You pass close to the farm buildings of this gentleman, who is well known in England as the proprietor of the British collection of medals.

The plains contain several thousand acres, clear of timber, and of the richest alluvial soil, producing heavy crops of wheat, maize, or whatever else is sown thereupon; while the natural grasses are of the most luxuriant description. These plains

are the great resort of our wild turkeys, which you will see here stalking majestically about, and which afford an excellent and most delicate repast. Here is an inn too, and a ferry-boat capable of conveying carts and heavy articles across when the river is up, at the stern of which the horses and bullocks are made to swim by a line fastened to their heads. For sixteen miles above this on the left bank, settlers are located; but crossing to the right bank you strike farther into the interior from the river, and find no habitation for twelve miles, although the land here has been granted, stock-runs alone existing through that distance. (The country is all open forest, affording generally good pasture, until you arrive upon the banks of the river again at Twickenham Meadows, forty-six miles from this ford.) Mr. Glennie's, at Dulwich Grove, twelve miles distant from the ford, is the first habitation you meet with, situated upon a fine fresh-water rivulet, with deep limpid pools along its course, affording excellent water and abundance of fish all the year round. A considerable part of this farm is fenced, and under cultivation. Four miles farther on is Mr. Bowman's, situated

between two rivulets, one of fresh and the other of brackish water, for the latter of which the sheep have a great predilection. Extensive buildings for packing and sorting wool are erected here, Mr. Bowman's flocks being numerous, and ranking among the finest cross-breds in the colony.

Twenty-four miles herefrom you enter upon the rich alluvial plains called Twickenham Meadows, which consist of a series of the finest alluvial flats, dotted lightly over with trees, (with good forest land behind,) extending through a distance of twelve miles and upwards along both banks of the river, and averaging from half a mile to one and a half broad. From Wallis Plains upwards to Twickenham Meadows, the country gradually rises in elevation, but so imperceptibly, that you are only made aware of it by the numerous rapids you perceive in the river as you pass along. This rich and beautiful tract of country was but very lately discovered by Mr. H. Dangar, our zealous surveyor on this river, and such was the eagerness to obtain locations here, that it was all granted away in a very few months after that gentleman's first visit.

On disentangling yourself from among the un-

dulating hills and ridges which bound these beautiful meadows, one of the richest natural prospects that can well be witnessed presents itself,—the flat alluvial lands spread out before you being matted with luxuriant herbage; branching evergreens scattered singly or in irregular clumps; the river winding through the midst; whilst dark-foliaged swamp-oaks, bordering with a deep-green fringe its steep and grassy banks, and the gently rising hills beyond, thinly clothed with wide-spreading forest-trees, extend in diversified magnificence as far as eye can reach.

You enter first upon Edinglassie, the property of Mr. George Forbes, brother to our able and amiable chief justice, who possesses many thousand acres here, which he is stocking with fine-woolled sheep. To the right, is Captain Dickson's farm, and to the left in succession, the farms of Messrs. Carter, Mills, and Ogilvie. On the opposite bank there are only two resident proprietors, namely Captain Pike and Mr. Greig, the remainder of the land being all occupied as stock-runs by distant proprietors. Mr. Ogilvie and his family are resident upon their property at Merton,

the scenery whereof exceeds even that of Edinglassie, being still more various in its features: in fact, I may add, that it is the only place which, having before heard much praised, I was not disappointed in.

In all these luxuriant plains there is scarcely a superfluous tree to be seen, not often above a dozen to the acre; and patches of acres are here and there met with destitute even of one, and only requiring the instrumentality of the plough to produce an abundant crop. It is this freedom from superfluous timber which, among other things, gives so decided a preference to New South Wales over America, where your capital is often exhausted in making the land *fit* for the plough; whereas here, you will often meet with enough to serve your purpose, without a farthing of previous outlay on account of clearing. Every thing depends, in forming a new establishment, upon economising your means at the outset; and in a country where you have thus abundance of land fit at once for the plough, and a greater abundance still affording the finest pasture, all without the trouble or expense of cutting down a tree, how-

manifest must the advantage resulting be to a new settler!

Mr. Ogilvie possesses here six thousand acres, consisting of alluvial flats and lightly-timbered forest land backwards, bounded by a moderately high ridge. A plain of fifty acres of rich land (*without a tree upon it*) is situated in the middle of the grant, overlooked by a beautiful swelling hill, equally clear, of the finest sort of garden mould, and covered with luxuriant grasses. The Goulburn enters Hunter's River opposite to the bottom of Mr. Ogilvie's grant, the plains on each side being hemmed in by woody ridges of moderate elevation, toward which the back land gradually rises. Contrary to what is generally found in other parts of the country, the ridges upon the upper part of Hunter's River are almost uniformly flattened at the top, forming little miniature hills and valleys covered with fine soil of moderate depth, and abounding in grass, which makes them the great resort of the kangaroos and cattle in the winter season. Behind the ridge bounding Mr. Ogilvie's farm, at four miles distance, is Mr. George Blaxland's residence, where several flocks of fine-

woolled sheep and a large herd of cattle are kept. Captain Pike brought out to his residence here, a good assortment of Saxon and Spanish Merinos, which promise to be a great benefit to the flocks on this river, besides the advantages he will individually derive from them. Twenty-four miles above this, at Holdsworthy Downs, Lieut. Gibbs, Mr. Carlisle, R. N. and the Messrs. Little, are settled, with Mr. M'Intyre, agent for Potter Macqueen, M. P. Farther on again, several young Scotchmen have taken grants upon some fine clear downs along the banks of a branch of the Goulburn. All these gentlemen possess sheep, and indeed there is no settler of any note upon this extensive river, who is not turning his attention to the production of fine wool. It would be difficult to arrive at a proper computation of the numbers of the sheep, but they cannot at the present moment amount to less, I should think, than twenty thousand; which circumstance, considering the very short time this portion of the colony has been settled, affords no bad criterion of its prosperity; and as above twenty gentlemen have now flocks in their possession, and are devoting themselves to

their improvement, we may hope soon to see fine wool become an article of considerable export from hence, rendering it desirable for a vessel to call purposely at Newcastle to ship it off.

The country between the head of Hunter's River and the Bathurst settlements is now located, in both directions, to within thirty miles of each other; clear pastoral downs and open forest land extending in stripes nearly all the way, so level, that, by the concurrent testimony of all who have travelled this route, a gig might be driven nearly the whole distance. The settlers on this river possess a paramount advantage, in point of locality, in having the very extensive grazing country about Liverpool Plains in their rear, whither they may remove their herds, when too numerous to be supported by the land in their immediate occupation. These plains occupy a space of about sixty miles square, besides branching out among the hills in various directions,—all fine rich grassy soil without a tree, excepting where a small woody hill occasionally rises from the bosom of the plain to vary and beautify the prospect. In looking down upon this extensive tract from the summit of one

of the overhanging ridges, the country appears to be spread out like a green ocean, of unbounded extent, with clusters of woody islands bespangling its surface. These plains are well watered; but as they often consist of rather a wet clayey soil, they appear better adapted for cattle than sheep grazing. No just criterion, however, can be formed if they are visited immediately after the rain, from the appearance then presented: many places in the colony, which in their natural state were so swampy that a horse could not cross them without sticking fast, have become, in consequence of the sheep-treading, firm and hard grounds. Cattle and sheep require two very different kinds of herbage,—moist pasture suiting the former best, and dry pasture the latter; both their health and the superior quality of the meat depending upon this point. Hence the superiority of the breeds of the English Devons and Scotch Galloways and Argyles, in point of symmetry and flavour, over the generality of cattle from other counties,—Devonshire, Galloway, and Argyle, being situate upon the western side of our island, and noted for the quantity of rain falling therein. Hence, too, the

superiority of the Down mutton over that bred in the heavy pastures of Lincoln and similar places:—though the carcases of the latter are larger, yet the meat is coarser and inferior in taste; and, indeed, bulk seems, either regarding cattle or sheep, incompatible with fine meat. Hence again, in this colony, no cattle or sheep are produced so large as upon the heavy pastures about Bathurst and some portions of Argyle; Mr. Throsby having killed a five-year old bullock, fattened upon the natural grass on his estate of Bon-Bon in the latter county, weighing fourteen hundred pounds, while wethers have been killed at Bathurst from one hundred to one hundred and twenty pounds dead weight.

LETTER IX.

THE transalpine country beyond the barrier range of the Blue mountains, dividing the eastern and western waters, was discovered in 1813, and has been since rapidly rising into notice, on account of the fine cool climate and the rich pastural flats and downs recommending it to the notice of the husbandman. The government station and village of Bathurst lie one hundred and thirty-five miles westerly from Sydney. The old road thither commences at Emu Ford, near Sir John Jamison's; and crosses the Blue mountains by way of Springwood, King's Table Land, and Mount York, to the left of which it passes down into the plains by a difficult descent, known by the name of Cox's Pass, where the fine transalpine downy country opens out. You ascend, from Emu Plains, a steep accli-

vity called Lapstone Hill, and keep still slowly on the rise till you reach Spring-wood, twelve miles and a half distant, where a party of soldiers is stationed. Spring-wood is so named from an adjacent fine spring of water. From hence to the Weather-board hut, on King's Table Land, the distance is sixteen miles, and from this to the bottom of Cox's Pass twenty-one miles and a half; so that the distance across the Blue mountains from Emu to this pass is altogether fifty miles, or two days' journey for horses, three for cattle, and a little more for sheep. From Emu to the Weather-board hut the land is rather closely timbered with tall trees; but beyond this, stunted dwarfs mark the scenery, which now puts on a bleak alpine appearance. A tolerable supply of water, with very little grass, is to be had throughout these fifty miles; but our indefatigable inspector of roads, Captain Dumaresq, has discovered a route a little to the left of the old one, where both water and feed will be amply provided. Many cattle have perished from absolute want in driving them over the mountains at improper seasons.

King's Table Land is 2727 feet above the level of the sea; the vale of Clwdd on this side of Mount York, 2496; the summit of Mount York, 3292; and Bathurst 1970, according to the barometrical measurements of Mr. Oxley. You see, therefore, from the great altitude of Bathurst, how comparatively cool its temperature must be. Cox's River, running *easterly* into the Hawkesbury, takes its origin in the vale of Clwdd immediately to the left of Mount York; while eight miles farther again to the left, the Fish river, running *westerly* into the Macquarie, rises in Clarence's hilly range; so that here are two rivers pursuing opposite courses having their origin nearly abreast, and within a few miles of each other. Another road, in a line from Richmond to the right of Mount York, is now nearly completed, which is a trifle shorter than the old one, and less abrupt, but almost equally deficient in water and grass,—the land on each side, though pretty good, being all brushy, and consequently destitute of herbage. The whole of this portion of the Blue-mountain range is occupied by the county of Westmoreland, (the old road passing across its base,) this county

extending about eighty miles in a southerly direction, and sixty miles in a westerly.

Emu Plains are in this county, which also comprises several of the fertile valleys to the west of the mountains; but its general surface is so barren and mountainous, that a small portion only will ever be an object of interest to the agriculturist.

The county of Londonderry occupies the space beyond this to the left of the Macquarie, and the county of Roxburgh the space to the right. A great number of respectable and wealthy settlers now hold locations in these western counties; fifty thousand acres of fine land round Bathurst being naturally clear of timber. The county of Roxburgh forms the principal nucleus of the emigrant population, nearly all the valuable portion of the county of Londonderry having hitherto been very foolishly retained in the possession of the government; but this system is now verging fast to a close, the whole being about to be disposed of, as well as the cattle, sheep, and all other effects possessed by the ruling powers here,—which will give an immense stimulus to the prosperity of Bathurst.

To the right and left, among the mountains; (after crossing the barrier range,) various respectable settlers have fixed their abodes, the pasture being exceeding good in some of the valleys among these hills, and various portions of alluvial land found upon the margins of the rivulets, from which good crops are produced. Resident proprietors and stock-stations are to be found likewise away to the left, toward the county of Argyle, to which there is a track for sheep and cattle to pass between the two places. Stock-stations have also been fixed in the direction of Liverpool Plains, while lands have been surveyed and granted within twenty miles of Mount Dangar adjoining the Hunter's River settlement.—Bathurst Plains ought more properly to be called *Downs*, inasmuch as they are but a succession of gently swelling hills, clear of timber and covered with luxuriant herbage, which affords abundant food to numerous flocks and herds. Occasional open downs of this description, with good forest lands, extend along the banks of the Macquarie for full a hundred and twenty miles, the marshes in which the Macquarie terminates being a hundred and twenty miles still beyond

this, or two hundred and forty miles from Bathurst, in a straight line.

At Wellington Valley, upon the Macquarie, seventy miles below Bathurst, a government agricultural and stock station has been for some years established, which will now probably follow the fate of the other government farms, and the convicts who labour on it be disposed of to complete works more conducive to colonial prosperity. Many of these fine portions of country, however, are at too remote distances from water-carriage to the sea-coast, ever to become desirable objects to the free settler, unless some navigable outlet should be found to the Macquarie river, through which the produce could be exported. A project has often been talked of, of cutting a canal from near Emu Ford to Paramatta, and thus not only reducing the land-carriage from Bathurst forty miles this way, but affording a direct outlet to Sydney, for the produce of the rich banks of the Hawkesbury, and diminishing the destructiveness of the Hawkesbury floods, by opening another and more direct channel for its waters to the sea.

The discovery of the transalpine country of

Bathurst took place just in time to secure the colony against the long train of evils which was pressing upon it, from a fast-increasing population and still faster increasing stock being pent up in the narrow stripe of land between the Blue mountains and the sea; so that this discovery was then hailed; and is still looked upon, as the most beneficial to the public ever made since the foundation of the colony; and as soon as permission could be obtained, the superabundant population and superabundant flocks and herds poured like a torrent over the dividing barrier-ridge, inundating the fine plains and downs beyond its western base. The quantity of sheep and cattle in this territory is now immense, the greater proportion of the wool exported from the colony being furnished therefrom. Bathurst has acquired, also, as great a reputation in the colony for cheese as Cheshire has in England. To Mrs. Rankin, a lady from the borders of Ayrshire, it is indebted for this high name,—"Rankin's cheese," being a good imitation of the celebrated Dunlop cheese from that county, but having some of the qualities of the Cheshire ingrafted upon it. It is sold

wholesale at from nine-pence to one shilling per pound, and several hundreds per annum (I am afraid to mention the actual sum I have heard spoken of) are cleared by this individual alone. Mr. Innes's cheese, from the same place, also possesses high reputation. The cheeses are sent over to Sydney, in many hundred weights at a time, and generally sold off hand. A windmill, belonging to Mr. Hawkins, R. N., and a water-mill appertaining to Mr. Innes, have been within these two years erected, and afford great assistance to the settlers around.

Neither is Bathurst behind the other portions of the colony in the means of mental improvement and recreation. An academy is established here, the pretensions whereof may best be estimated from the following advertisement, extracted from the Sydney Gazette of May 29th, 1826.

BATHURST CLASSICAL AND MERCANTILE SCHOOL.

Ingredere ut proficias.

YOUNG GENTLEMEN are BOARDED and EDUCATED at the above Establishment, in the English, Latin, and Greek Languages; Merchants' Accounts; Book-keeping, by double and single entry; Geography; Geome-

try; Trigonometry; Mensuration of solids and superficials, &c. &c. &c. Terms, Thirty Guineas per Annum, including Washing. Only one Month's Vacation at Christmas. A Quarter's Notice to be given previous to the Removal of any Pupil from the Establishment.

Mr. HOLLOWAY avails himself of this Opportunity to inform Parents and Guardians, that his Method of Instruction is founded in practical Experience, and his Plan of Education so happily combines Efficiency with Information, that the Pupil must unavoidably improve in every Branch of Learning he studies.

A society denominated the "Bathurst Literary Society," has also been lately instituted, ranking already nearly twenty resident members, all gentlemen of education and respectability, upon its list. It is under the direction of a president, vice-president, and committee of five members, the entrance-fee being three guineas and the annual subscription two guineas. Its object is, to form a library for the use of subscribers, and to promote generally harmony and sociality among the community, by the discussion of interesting topics.

Neither have the healthy country sports of old England been overlooked: the "Bathurst Hunt"

having been upwards of two years in existence, for coursing the native dog;—the uniform of the sportsmen, a green jacket, turned up with velvet, (ornamented with a native dog embroidered in gold upon the collar,) bearing gilt buttons with "Bathurst Hunt," in legible characters upon them. Each member is bound to keep a certain number of dogs, and days are fixed for a general turn-out, when farming operations are not over pressing; and some good sport has already been furnished during these meetings, which promise to afford not only a pleasant healthful recreation to the settlers at large, but to keep under that undisguised and open enemy to their flocks, the native dog.

Such already is Bathurst, which only six short years ago did not possess a single respectable resident settler! whereas now we see it abounding in such: abounding likewise in every requisite to constitute happiness—wealth sufficient to furnish all the comforts of life; a healthy climate, to enable them to be enjoyed; and an intelligent and harmonious society. No better proof can indeed

be given of the *healthfulness* of Bathurst, than that the only death owing to natural causes from the period of its first settlement took place in 1826, after a space of twelve years.

LETTER X.

THE country to the *northward* of Hunter's River, which will hereafter be more immediately available for settlers, may be comprehended in a line drawn from Camden Haven, south of Port Macquarie, to beyond Moreton Bay—a distance of more than three hundred miles in a north-easterly direction, and lying between the latitudes of 31½° and 27½° south. Its temperature will therefore be about the same as the southern provinces of the Brazils and Paraguay, and the central portions of Chile, which are included in the same latitudes; and as southern latitudes are known to be colder than the corresponding northern ones, it is to be presumed that the whole of this extensive portion of the Australian territory will be found advantageous for sheep-husbandry,

since its climate will certainly not be hotter than that of the Barbary states, from whence the Merinos originally come, which states embrace nearly the same corresponding latitudes to the north of the line as the portion of Australian territory now under consideration does to the south.

Port Macquarie and Moreton Bay are both occupied at present as penal stations, but this will at all events be no longer the case when such stations are in requisition for colonization, as the government will then no doubt dispose in some other way of the incorrigibles sentenced there: indeed an experiment is at this instant about to be tried, of employing them throughout the colony in the formation and repairing of roads, bridges, and streets; and there can be no question that the measure will prove as safe and successful in its application for penal purposes, as it will be found productive of benefit to the colony.

Port Macquarie is a bar-harbour of ten feet water, but dangerous to enter except at full tide, on account of the rapid current setting the vessels ashore upon the sand-rollers on the north side of its entrance. There is secure anchorage within

for a great number of vessels, and the river Hastings, falling into it, is navigable some distance up.

This river possesses two branches,—one flowing from the north-west, and the other from the westward, on both of which penal farming establishments have been formed. Numbers of small woody islands are found in the western branch, besides a large one named Rawdon's Island. The banks of the river are high; and having its origin in the mountains, it is subject to sudden inundation. The soil on the margin is, generally, rich alluvial, thickly timbered with cedar-trees, and matted with vine brushes, while the hills behind partake of the open forest description of country in other parts of New South Wales.—Various clear plains have been at different periods discovered, affording good crops of productions suitable to the climate, which certainly has as yet not appeared very propitious for wheat, that kind of grain being generally either burnt up or running into straw: experience, however, may remedy this defect. The sugar-cane thrives well, and a good quantity of fine sugar, and fair samples of rum, have been produced here of

late;—ninety acres of cane being this year (1826) in cultivation. Both soil and climate seem admirably adapted for tobacco, numbers of the leaves of that plant averaging three and a half feet in length and two and a half feet in breadth.

The scenery of the river is most beautiful, while the wide range of pastoral hills and agricultural valleys along its banks, points it out as likely to become at some future period a most desirable situation. The dividing range is here one hundred miles distant, the summit being 6500 feet high, beyond which Cockburn's River, running westerly, takes its origin, and passes through a fine forest country bordering on Liverpool Plains, from the northern extremity whereof Port Macquarie is distant one hundred and twenty miles in a direct compass line. This settlement thus possesses also a westerly outlet for the spreading of flocks and herds when increased beyond the means of subsistence in the country on this side the mountain range. There is good anchorage outside of the bar of Port Macquarie for ships of the largest class, when not blowing too strong upon the shore,

and here the large vessels lading with cedar lie at anchor until their cargoes are completed by the rafts floated out to them.

This spring a black native named Mooney gave information of a river being situated a very short way from one of the upper bends in the north-west arm of the Hastings, and a boat was accordingly despatched in that direction and dragged across an isthmus of about six miles to the new stream, which was at this point three hundred and seventy yards broad and three fathoms deep. At a distance of twelve miles from the coast, this newly-discovered river branched off in two directions toward the sea; the main branch, down which the boat proceeded, being only forty yards broad at the embouchure, with a bar across, having from twelve to seventeen feet water upon it.

This river was subsequently found to be navigable for vessels of three hundred tons to the distance of fifty-seven miles, where a fall impeded farther progress. A great extent of open pastoral forest hills, with alluvial untimbered plains, were found to lie along its banks, holding out the most flattering prospects to the agricultural settler, while the navigable

extent of this stream, which falls into Trial Bay thirty-five miles to the north of Port Macquarie, will afford a commodious and secure harbour for the shipping which have to carry the produce off.—Between Trial and Moreton Bays, there is only one small shoal haven laid down in the chart; but from a high hill upon Trial River, another large river was seen forty miles to the northward, disemboguing into the sea from the north-east, thus still farther increasing our knowledge of the great natural capabilities of our fine colony, which every succeeding month is developing still farther and farther.

Moreton Bay, our farthest northern settlement, is four hundred and eighty miles from Port Jackson, it being formed upon the Brisbane river discovered by Mr. Oxley a few years since. Moreton Bay has two entrances, and is full of mud-banks with safe channels between. The river Brisbane is navigable twenty miles up by ships drawing sixteen feet water, at which point a ridge of rocks crosses its bed. It has been examined above one hundred miles interiorly by Major Lockyer and Mr. Gray, and the channel found to

admit of boats proceeding a great distance. The country on each side consists of rich brushy thickly-wooded flat, toward the river, with open hilly forest land extending backwards, rather stony but well coated with grass.—One uniform undulating level is presented toward the right, of the same description of forest land, while toward the left the high hills, composing the Mount-Warning range, are seen in the horizon. Trees of the most luxuriant growth,—particularly a species of cypress resembling the Norfolk Island pine, with a stem of from fifty to eighty feet, without a branch,—here abound, and will no doubt form a valuable addition to the future resources of the colony. Eighty-five acres of land were during the present year in cultivation at Moreton Bay; and whenever the time arrives for the settling of this portion of our territory, a tract of country will be laid open unequalled for soil, climate, and all other natural capabilities, by any other in the same latitude on the face of the globe.

It appears to be only within these few years that we have begun to know any thing of the extensive range of fine country around us. When Messrs.

Hovell and Hume arrived with their announced discoveries of the beautiful arable and pastoral districts toward Western Port, and the extensive navigable river running into it, they were laughed at by many here, and their accounts ridiculed as downright romances; but now, we find every iota of their statements *most fully verified.* The land around Port Stephens, too, had been considered quite of a wretched description until Mr. Dawson, agent to the Australian Company, went down and inspected it, and now one million acres of good agricultural and pastoral land, thinly wooded and well watered, have been with great facility picked out of this said *wretched* place. It is but a few years back, likewise, when Mr. H. Dangar, our assistant surveyor, was sent down to Hunter's River to complete the survey of the land in that settlement, none worthy of measurement being supposed to extend above twenty-five miles up the stream, which he was assured by the commandant had its origin in some barren mountains thereabouts, he having traced it (as he declared) in a boat to near its source. Mr. Dangar went on exploring however; measuring and opening out every week some new tract of good

land, until he worked his way in a boat to the district of Patrick's Plains, forty-five miles above Newcastle. Here, to his great surprise, he perceived several stockmen at work, who, on seeing the boat advance toward them, instantly threw down their tools and dived into the bush, alarmed at this sudden and unlooked-for invasion. They turned out to be the servants of some Hawkesbury settlers, who had explored the present route over the Bulgar, and had brought their cattle to graze upon the rich plains they here discovered. From the distant and circuitous route traversed, they did not positively know what river they had built their huts upon; but at all events, never dreamt of being so near Newcastle. From the pretty general belief, too, among the convicts, that China and Timor border somewhere close upon the colony, no wonder this unexpected inroad should alarm them, as, whether it turned out to be the "Governor of China's" barge or the "King of Timor's," they knew they had taken possession of a questionable territory, and the visit therefore now made must be any thing but a friendly one. The English dress, English looks, and English language, soon, how-

ever, quieted their apprehension, and a mutual understanding was forthwith brought about without either a Chinese or a High Dutch interpreter being required to translate a word of the conference.

LETTER XI.

THE extraordinary healthiness of the climate of New South Wales must be of no trifling importance in the eyes of a European, considering how unhealthy most other new countries are. Intermittents, remittents, typhus, scarlet fever, small-pox, measles, hooping-cough, and croup, are here unknown. Some few cases allied to remittent and continued fever have certainly been observed, but nothing *decidedly* of that nature. Dysentery is the most prevalent and fatal disease we have; yet deaths even from this cause are exceeding rare among the sober-living portion of the community, and far from common even among the debauched, with whom dropsical affections are somewhat frequent, as may be expected. Dyspeptic complaints are generally aggravated in the

low, warm, portions of our country; but relieved by the free dry air of the uplands. Children are very subject to the *teres*, or round-worm, so common in warm climates; and on reaching the age of puberty, phthisis is liable to supervene from the rapid sprouting out in stature of our youths at this period; but the European phthisis is uniformly cured or at least relieved by a removal hither, if early resorted to. An epidemic influenza carried off a number of the old Europeans some years ago, and also not a few of the aborigines, while many of our younger individuals occasionally feel the effects of it to this day. It appeared at the time, or immediately in the rear, of a hot northern wind, the symptoms being violent headaches, cough, sneezing, and inflamed eyes; with a quick pulse, and other general febrile concomitants. This year (1826) it has again fatally visited the colony.—An inflammation of the eyes, called "the blight," often follows, too, the same wind. The lower palpebræ are the chief seat of the disease, becoming red and swollen, and discharging a glutinous sort of matter, which seals the eyelids together. This disease is attended also with a painful

itching sensation, which induces the patient to be constantly rubbing the eyes, and thus increasing the symptoms. The winds that cause this ophthalmy occur about October and November—your April and May. They are often not unpleasantly warm at this time, but, from their keen, dry, disagreeable feel, somewhat resemble English easterly winds in the above spring months, and, like them too, are the winds that occasion our vegetable blights. This common disease is more troublesome than severe, being mild in the symptoms and generally very easily remediable by shading from the sun and washing the eyes with a little weak goulard water.—True syphilis among the whites, as far as I have heard, appears to be unknown; but gonorrhœa is exceedingly common, and very virulent while it lasts, though always yielding readily to low diet, rest, and frequent ablutions.

As we inhabit the opposite pole to you, south winds are consequently our *cold* winds, and north winds our *hot*. Our south-easters are at times particularly piercing, and when there is a sudden shift from a roasting north-wester to one of these chilling winds, you will find a close-buttoned surtout over

your every-day garb, a very comfortable sort of commodity. These hot north-westers, as I mentioned before, are produced by a long range of bare sandstone hills in that direction, which are heated, by the strong perpendicular summer rays, to a pitch rivalling the sands of the African deserts; while the wind, in blowing over them, being freed of its moisture, arrives among us with a breath too scorching to be pleasant to either animal or vegetable temperaments. I have seen the thermometer in the shade rise instantly through the effects of this wind from eighty to a hundred and ten. The best way of combating it is to shut close all the doors and windows, by which means you will cause a difference of from ten to fifteen degrees to take place in your favour. We once indeed had a hot *south-wester*, but possibly it might have arisen from an extensive conflagration in that direction, to which cause alone we owe some of our partial hot summer winds.

The following table, abridged from a diary kept at Sydney by Major Goulbourn, our late able colonial secretary, shows the *average* height of the thermometer in the shade at *noon* during the entire

of each month, and the number of days in each month in which rain fell. It is from May, 1821, to April, 1822; but you will bear in mind, that I do not give this as an average of the rain, as we have sometimes had five months without rain, as in 1826.

Date.	Ther.	Days' Rain.	Date.	Ther.	Days' Rain.
May	61	„	November . .	67	8
June . . .	58½	9	December . .	74	7
July . . .	54	8	January	72	7
August . .	56	10	February . .	75½	14
September .	62	9	March . . .	71½	9
October . .	64½	6	April . . .	68½	12

The number of days on which rain fell, as noted here, are ninety-nine;—but May having been omitted, by adding eight more for it, a total will result of a hundred and seven days for the whole year. It appears by a meteorological table kept by Sir Thomas Brisbane, at Paramatta, from May, 1822, to April, 1823, that nearly thirty inches of rain fell during that time; but as no rain is there noted to have fallen during the months of May, June, July,

and August—nor is the hygrometer in these months marked,—the above thirty inches relate doubtless therefore to only eight months in the year, and these eight months too the spring, summer, and autumn months,—rain falling generally heaviest during winter.

The heat in this country, through the general dryness of the air, is much less oppressive at equal degrees of temperature than in England. Even in our hot dry winds, with the thermometer at a hundred, the temperature has not been to me so intolerable as that of many summer days I have experienced in England, with the thermometer from twenty to thirty degrees lower. A certain portion of vapour is necessary in atmosphere to render it agreeable to animal respiration, but we can bear this amount of vapour to be *diminished* with less unpleasantness to our feelings than we can to have it *increased*. It matters not whether the temperature be high or low, if the vapour exceeds a certain ratio;—the respiration is still oppressed by it; though the evil is greater, as a matter of course, in high than low temperatures. In the cold thick November fogs, our respiration

feels certainly clogged and oppressed, but much more so in the hot days in summer, when the air is overcharged with moisture. People have been known to seat themselves in an oven with a leg of mutton roasting alongside of them; but had a tea-cup of water been thrown into the oven, they would soon have made a speedy retreat. The Americans are in the habit of placing a tin of water upon the top of their stoves, to counteract the arid feel of the air from the drying effects of the stove; but were this vapour increased beyond a proper *ratio*, the cure would be more insufferable than the disease. The thermometer, therefore, is no just criterion in itself of the relative disagreeableness of climates with respect to temperature,—we must take the rate of the hygrometer along with it.

The thirty inches of rain stated to have fallen at Paramatta in eight months may lead some to say that New South Wales cannot be a very dry climate, as, in the moist western counties of England the rain varies only from forty to sixty inches in twelve months. But then the rain in New South Wales is by no means so regular in its falling as in England, the country being too commonly either

burnt up by months of drought or deluged with periodical rains, while the higher temperature of the climate causes a greater evaporation, and consequently a greater demand for moisture.—The barometer, though indicating the true weight of the general atmospheric column, gives us no indication as to its density; and in fact it will mostly be found, that the lighter the atmospheric column is, the denser the lower stratum of the atmosphere is also.—The atmospheric air can only retain a certain portion of vapour in solution, as water can only retain a certain portion of salt in solution, heat increasing the solvent properties of both air and water, and cold of course diminishing them; therefore when the temperature of the atmospheric column is diminished, or a part of its pure air is subtracted from it, a portion of the vapours held in solution will naturally descend, and either increase the density of the lower atmospheric strata, or fall to the ground in shape of dew or rain.—The rising of the barometer we see succeeded by fair weather, from the *increased* amount of pure air in the atmospheric column pressing the mercury up in the barometer, and dissolving such vapours floating about

as were disposed to descend in rain. The fall of the barometer, again, we see succeeded by wind or rain, because then a part of the pure air in the atmospheric column is subtracted, and either a portion of contiguous air must rush in to fill up the vacuum, and dissolve the vapours, or rain will inevitably result. Nothing can be a better proof of the increased density of the *lower* atmospheric stratum previous to rain, by reason of the vapours then condensed therein, than the more intense conveyance of sound at such periods.—It is a common remark with individuals living near running streams,—"There is the river roaring again! we shall have rain before morning;" and again, "How close and oppressive this weather is! we are going to have rain."

It is owing to the effects of heat upon this atmospheric air and vapour, that we find our valleys *colder* in winter and *warmer* in summer than our moderately elevated hills, even although the thermometer may indicate but a few degrees of difference in their relative temperature; and hence arises the circumstance, that the grass in our valleys is

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burnt up by the heats in summer, and nipped by the winter frosts, when that on the hills almost totally escapes, on account of which the hills are the constant resort of the cattle and kangaroos during winter.

As air and vapour become denser by cold, therefore the coldest vapours naturally descend into the valleys during night, urged also by the light breezes skimming over the summits of the hills,—so that the air and vapour which fall into the valleys are not only several degrees colder than those on the hills, but, being denser, carry the heat off faster from whatever substances come in contact therewith, as all bodies conduct heat quickly in proportion to their density. We see here, in calm evenings, the vapours descend in fleecy bundles into the valleys, which they fill to some considerable depth. In summer these vapours fall upon the grass in shape of dew, but in winter are converted into a hoar frost, nipping up the vitality of the grass, which receives a farther blow from being so quickly thawed by the rays of the sun acting more powerfully on them, in consequence of the greater

stillness of the air; for to secure the vitality of a body in a frozen state, the thawing process must be slowly conducted. Cold moist air chills our bodies more than dry air at the same temperature, because the former carries off the heat generated by our bodies quicker, it being a more powerful conductor; and hence, in passing out of the dry air of the hills down among the vapours in the valleys, in a winter's morning, we experience a sensation as if stepping out of the temperate into the frozen regions—although the thermometer indicates but a few degrees difference. In building a dwelling, therefore, it is a good rule to choose a moderately elevated hill for its site, where you will not only experience less of the winter's cold, but be less annoyed by the summer's heat.

We find here, also, the grass on the western side of hills much more burnt up than that on the eastern side; and, in fact, experience tells us, that the western rays of the sun possess the greatest power. This arises from the *eastern* rays being, for some hours in the morning, consumed in heating, and raising up from the earth, the cold vapours which had settled on it during the night.

By the time the sun reaches the meridian, these vapours are all dispelled, leaving to the western rays the duty of heating the earth itself. It will consequently be found advisable, in a warm country, to build a dwelling-house facing the east, because while experiencing more fully the agreeable warmth of the sun in the chill mornings, we shall have less of the overpowering fervour dispensed by it when declining in the west. It is a good rule, too, to build a dairy, or any house wherein to keep things cool, on the eastern side of a hill, and to shade it from the western rays by a screen of trees in that direction.

We have often heavy falls of rain upon our interior mountains, while on the low coast-land not a drop descends; and sometimes, though more rarely, the reverse is the case. We can easily suppose the first circumstance to arise from the vapours collected from the sea being carried over the low coast and drawn by the summits of the hills, as is observed in Galloway, where the sea-vapours that pass over the low county of Wigton are thus attracted and descend in rain. Some of the heaviest Hawkesbury floods have taken

place when not a drop of rain had fallen on the coast; while, on the contrary, during some of the heaviest of our rains this summer—particularly those which caused the flood at the South Creek and Paramatta—the upper hilly country was entirely unvisited. Our wet season, to the east of the Blue mountains, usually takes place during the winter months; while to the westward of these mountains, it occurs in summer. This is ingeniously and satisfactorily accounted for, by Mr. Oxley, by the westerly winds which prevail during the winter driving back the vapours collected from the sea, which, attracted by the eastern bases of the Blue mountains descend in rain on the eastern coast; while, again, the easterly winds which prevail during the summer carry these vapours over the Blue mountains, where, attracted by their western bases, they descend in rain there.

Dews fall very heavily in the colony, when the evenings are clear and still; and an old settler can always readily tell whether it is to be a dewy night or not, by the appearance of the sky and state of

the mountains there, and even continuing occasionally in the valleys till the sun is pretty high, whilst in Cumberland and Camden the phenomenon of snow is absolutely unknown, though in the same latitude as Argyle and Bathurst.

however, heavier than I have read of in England; but certainly they occur with us more frequently.

December, January, and February, are the months during which thunder and lightning more particularly prevail; but we have slight instances also in November and March. The lightning flashes particularly vivid from the west, and will continue sometimes uninterruptedly for a succession of days, without being accompanied by thunder, or a drop of rain falling.

Frosts are but little felt in the lower parts of the colony, bordering on the sea; but interiorly they are pretty keen during the night and morning—ice being often found upon the shallow pools, of the thickness of a shilling, before the sun has made much progress. In the table lands and valleys of Bathurst and Argyle, situated at an altitude of two thousand feet above the sea, the frosts are still severer, and the climate is altogether so different, as to make the seasons nearly a month later than in Cumberland and Camden, upon the coast; —the snow often lying for days on the tops of

thus still more excited, that trees without bark should yet continue vegetating; and you are often not completely freed of your delusion, till you make an incision into the stem and unfold to view the green bark and sap within.

The greater portion of our woods are hard, and the trees derive their colonial names from various circumstances relating to their appearance, productions, or growth. The gum trees are so designated as a body from producing a gummy resinous matter, while the peculiarities of the bark usually fix the particular names of the species—thus the blue, spotted, black-butted, and woolly, gums are so nominated from the corresponding appearance of their respective barks;—the red and white gums from their wood;—and the flooded gums from growing in flooded land. The iron and stringy bark trees denote at once why they are so named,—the apple trees resemble the English apple-tree only in leaf; while the leaves of the *tea-tree* furnished the colonists with a substitute for the genuine plant in the early period of the colony, and from their containing a saccharine matter required no sugar. In the forest and swamp oaks you will

perceive little affinity to the English oak, but the nettle-tree will tell you at once by the touch whence comes its designation. The curryjong, kalang, or sassafras, and the boula, retain their native appellations. The cedar resembles the Honduras mahogany, while the acacias are the common wattles of this colony, their bark affording excellent tan, as well as an extract to export to England; while from their trunks and branches, clear transparent beads of the purest Arabian gum are seen suspended in the dry spring weather, which our young currency bantlings eagerly search after and regale themselves with.

Many of our forest-trees become early rotten or hollow in the heart, while the cores of others are drilled out by the white ants, and the spaces in them all so closely filled up too with earth, by the black ants (which follow in the train of the others), that scarcely a crevice is to be seen without earth in it; and to such a height is this carried, that in a branch just broken off full forty feet from the ground, I have observed mould filling all the pores in its heart, thickly peopled with old black ants, and crammed too with young. A considerable

number of our woods possess in a high degree the negative quality of incombustibility, originating, as has been supposed, in the large quantity of aluminous matter they contain, which renders them so desirable as house-timber, that fires are almost unknown amongst us, though the dryness of the climate might well be considered so conducive thereunto. If a red cinder drops upon a stringy-bark-boarded floor, it will smoulder away without bursting into flame. The gum that exudes from the gum trees (or eucalyptus species) exactly resembles, in taste and appearance, the *gum-kino* of the shops, and I have no doubt will be found to resemble it in medical qualities also. The bark of the wattles generally produces a reddish tan, which is noways ornamental to white stockings on putting on a pair of our new shoes; but other barks are made use of, whose tanning colour is unexceptionable. Large quantities of wattle-bark, and its extract, have been exported of late years to England, but the recent commercial distress has been sorely against all new speculations.

We possess above a hundred and thirty species of the acacia, and from them exudes, as I

before said, the purest gum arabic. It is so plentiful, at particular periods, that I could have collected in some places several pounds in an hour or two. It possesses all the good properties of the gum from Arabia, and is used successfully in this colony, in thin mucilage, as a drink in affections of the urinary organs, and dysentery. The wholesale price by the hammer in England, of these valuable gums from Arabia and Africa, varies from 2*l.* to 10*l.* per cwt. according to quality, the cheap being used by the manufacturers to stiffen calicoes, &c. and the fine for medical purposes and other operations wherein the purest sorts are required. Something, no doubt, might be made by us of this branch of trade, by encouraging the natives to procure the colonial gums. Even the very idle children, and the hordes of lazy fellows who hate hard work, might for a while obtain here an employment and a livelihood, if any spirited person would pay them well. These gums are only to be found at one particular period of the year, and quickly melt away in wet weather. A species of our eucalyptus produces also the finest manna, and that in very considerable abundance. It

is named by Mr. Allan Cunningham, the able botanist from Kew, the *eucalyptus mannifera*, and is met with in the cool regions of Argyle and Bathurst. The manna is found in flakes upon the grass, and also adhering to the branches and trunks, and several pounds may often be collected in a very short space of time. It must be looked for in the morning, as, should the sun shine out strong, it gradually dissolves. Manna is one of the safest, and almost the only pleasant purgative we possess, and it is only its scarcity and high price that have prevented its coming into more general use. Instead of surfeiting yourself with nauseous salts, jalap, and so forth, you have only to sweeten your tea in the morning with manna, or take a paper of it by way of barley-sugar in your pocket, and turn thus the doctor's hitherto nauseous posset into an agreeable *bonne-bouche*. The wholesale price of manna is at present about 3*s*. 6*d*. per pound; it once was as low as 2*s*. 6*d*. and up another time at 10*s*. 6*d*., but the average price is from 3*s*. to 4*s*. Here then is an excellent remunerating price for both the collector and shipper, calculated to call their attention to the procuring of this valuable medi-

cine; and if these trees are found to produce it in sufficient quantity, I see nothing likely to answer better than making plantations thereof at some future period. Supposing each tree to produce half a pound of manna worth 3*s*. per pound to the producer, there would be, with a hundred and sixty trees to the acre, a clear revenue of 12*l*. per acre at the expense of a few days' annual labour, besides having the benefit still of this acre throughout the year for grazing. It is by endeavouring to produce articles whereto other countries have *not* particularly turned their attention, that we must expect to prosper. Various trees in Europe furnish manna, but it is chiefly obtained from a species of the fraxinus in Calabria and Sicily, by tying girdles of straw round the tree for it to exude upon.

The contractility of a great number of the woods of Australia has been often remarked on, but I think this quality has been greatly exaggerated. I believe much of it is owing to the dryness of our climate, and the little care that is taken in the seasoning of these timbers. I have seen the American pine, with which convict-ships are fitted

up, contract quite as much in warm weather on the voyage out as any of the Australian woods. The contractility may arise in a great measure from the timber containing a greater portion of sap throughout the year than deciduous trees, and it has been attributed also to the alumina in the composition. Certainly some of the young saplings do contract most amazingly, and most quickly. Twice were the slip-rails of a gate reported to me as too short, and tumbling out, though I had given strict injunctions to the workman, each time, to fit them in long enough;—so I resolved to superintend the operation in person, and saw them put in of ample length; but in less than a week they tumbled out again, having shrunk upwards of two inches in that short period. The bark of the curryjong and stringy-bark trees, by a little beating and soaking in water, is manufactured into strong and durable ropes by the settlers; while that of the box and the stringy-bark makes good roofs for cattle, as also cart-sheds, and workmen's huts, the box-bark possessing considerable incombustible properties, and the others being rather of a tindery

description. Trees here appear to follow the same laws as other vegetable substances, regarding the effects they produce upon the soil wherein they grow. It has long been remarked in America, that on the forests being cut down, young trees of a different species sprout up in place of the old ones; and here the same remark, in a great measure, holds good,—acacias very commonly making their appearance on land that has been once under cultivation, and afterwards permitted to relapse into a state of nature. From this circumstance it should seem, that trees, like other vegetables, extract a particular substance from the ground, which substance it is necessary should be restored before the same species of tree can be readily grown a second time,—a restoration to be effected, perhaps, by such chemical changes in the constituent particles of the soil as may arise from the cultivation of other species. Mr. Sinclair, in his excellent treatise on British grasses, seems to imply strongly his belief in principles similar to these, by pressing upon the attention of the agricultural public the number of species of grasses composing our English pastures, and the necessity of

sowing a great variety in order to insure a closer sward than you could otherwise possibly have. Agreeably to this principle, upon a spot of land where you cannot have a renewal of grass of one particular species, you may nevertheless raise various others,—in consequence of the chemical changes wrought by them respectively:—in confirmation of the soundness of which opinion, Mr. Sinclair states, that in a square foot of old English pasture, he detected twenty-two different varieties of grasses. Hence we see the utility of planting various species of timber upon the same land, because, each exciting its own peculiar chemical action, and drawing generally a particular species of nourishment not coveted by the others, not only may a greater number of trees be reared from the same piece of ground, but the whole will be pushed forth in greater luxuriance by each species aiding the growth of the others.

We have nettles here, differing in no respect from those of England;—also wild flax, wild tares, wild indigo, rib-grass of two varieties, chichory, trefoil, and burnet,—all natives of the country. Of na-

tive grasses, we possess the oat-grass, rye-grass, fiorin, kangaroo-grass, and timothy,—blady grass growing in wet flooded alluvial spots, and wire-grass upon cold wet washed clays. We have the Indian doob-grass too, (English creeping dog-tooth grass,) introduced into the colony from India many years ago, and now become very general in the old settled parts, from its rapid spreading. Its roots, sinking deep in the earth, preserve it green in the summer, when almost all other grasses fail; but the frosts quickly destroy its verdure. The blady grass grows often to the height of two or three feet, and from its broad strong leaf makes excellent thatch. A wild cotton plant, introduced from Barbary, is become now a great pest, as, having a flying seed like the thistle, it spreads every where. It has filaments upon the stalk resembling flax, and has been exported to England and manufactured into various useful articles. Though our native grasses are now proved to be very nutritious, yet, from their general thinness over the ground, I may safely assert, that our richest native swards are full two-thirds inferior in point of closeness to the old pastures in England. The

grass here seems all to grow in detached tufts, without any of that continuity we observe in the pastures at home. To know that this is a dry climate, is in fact enough to assure us also; that it cannot be noted for close and heavy pastures, because all heavy pasture countries have wet climates. But this cannot be the sole cause: —part of this thinness is doubtless owing to the few varieties we possess of natural grasses, so that the *few* just require as much space to live in as the *many*, according to Mr. Sinclair's data already alluded to. This seems to gain additional confirmation, from there being no deficiency in the *growth* of our grasses, all of them pushing forth their stems as luxuriantly as the best English kinds; but then we see as much waste space between the tufts, even in our richest pastures, after burning off, as we might walk along upon on tiptoe without touching the grass-tufts around. The caking of the ground from the long summer droughts preventing the grass tillering out, and the ravages of the caterpillar, must tend, too, greatly to keep the sward thin. The caterpillars eat the grass closely down to the ground; so that, partly from this and

partly from the poisonous nature of their dung, together with the succeeding droughts, the whole pasture of a field will be completely annihilated for a year or two, until the seeds sown previous to the appearance of this vegetable pestilence have time to germinate and spring forth. The tares, rib grasses, and other native herbs, escape the ravages of the caterpillar, owing, I presume, to some aromatic property possessed by them; and as these are much relished by the sheep, and spread rapidly after such destructive visits, the caterpillar may finally bring about a revolution very agreeable to our flocks, by covering our fields with their favourite herbs. The old withered grasses are usually burnt off in the spring, and often at other periods of the year if you have an extensive run for your stock; and it is astonishing to see how quickly and how luxuriantly the new grasses will push up after these burnings, if a shower of rain should happen to follow them. When judiciously accomplished, they certainly produce most beneficial effects, by destroying all the old grass which the cattle and sheep refuse to eat, and which is therefore only a bar to their feeding; while they

destroy, too, the various broods of insects that nestle about the roots of the grasses; and charring slightly the surface of the ground, favour the subsequent vegetation. You must be cautious, however, not to put cattle or horses upon the burnt ground too early, as they not only materially injure the pasture, but are liable to be scoured by this young grass, owing to its great juiciness from rapidity of growth. As it is calculated that a single sheep will require nearly three acres of our best native pastures to maintain it throughout the year, you may easily perceive how far they are behind the rich old pastures in England in regard to productiveness. But, indeed, few places on the globe can equal the British isles in this particular; an intelligent settler here, who farmed considerably in England, and had travelled much over France and Italy, declared to me, that he had seen no pastures out of England at all equal to some he had met with even here. Over-pasturing seems certainly to do considerable injury; and the old residents will still smile to hear new-comers extol the pastoral richness of the newly-discovered countries: "Wait, wait," they will say, "till they

have been as long and as heavily pastured as the old country." Indeed, several competent and impartial judges have assured me, that they had seen no sward in any of these new-discovered regions superior to many portions of the olden-time pastures of Cumberland, now so poor and despised. This deterioration of the natural pastures, from excessive stocking, has induced many to suppose that a considerable portion of our native grasses are annuals, dying off yearly and reproduced from the seed, and all our agriculturists coincide in opinion that these grasses generally seed badly. We want much to have a course of experimental trials made with our native grasses, in order to ascertain how far they are capable of improvement from cultivation, and of being associated with the most suitable of the English grasses in ameliorating our swards. It is in this point of view that government farms are calculated to be of use; and certainly the government of a young country, like ours, could not devote a thousand or two yearly to a better purpose than experimentalizing upon systems and substances likely to be conducive to the awakening of its slumbering energies, and the

progressive advancement of its wealth. The partial experiments hitherto made with the English grasses prove clearly how much is to be gained by their judicious introduction; for, even defective as the permanent laying of them down has been, their superior productiveness (for a time at least) to the native swards, shows what might be done by a well-regulated system of artificial grass management. The land has been generally neither sufficiently pulverized nor in sufficient heart; nor have a sufficiency, or a sufficient variety, of grass seeds been sown, to afford a fair comparative trial. The English grasses appear to be more cut up by the summer's heat than the native ones, but stand the winter's cold better. The meadow fescue, cocksfoot, and several others, appear to flourish extremely as seedlings, and I have little doubt would flourish equally well in a sward, if fair trial were given them.

White clover grows here most luxuriantly, and when naturally sown, by means of the dung of animals spreads rapidly around, supplanting the native grasses. It falls an early victim to the parching droughts; yet the sheep notwithstanding

eagerly lick up its withered particles from the ground, and keep in tolerable condition in a field abounding with it, while famishing on the native pastures in the vicinity.

The desideratum is, to find out which of these English grasses best suits our soil and dry climate. The English down grasses particularly deserve a trial for our high lands, as being natives of higher and drier situations than the fescues and others we now possess, and being also so much relished by, and so congenial to, our favourite stock-sheep.

The swarms of grasshoppers and various other insects with which our pastures abound, must certainly injure them considerably, but in the red earth-worms (according to the experience of an excellent practical friend of mine) we possess enrichers rather than impoverishers of the sward. From many years' attentive observation in both England and Scotland, this gentleman has been led to conclude that they produce a good effect, the excretions which they pile up upon the surface of the sward serving, after bush-harrowing and rolling, the purpose of a top-dressing equal to compost, and effectually preventing the growth of fog. Fog,

however, is unknown in New South Wales, the mosses being the inhabitants of latitudes more cold and moist than ours.

When we consider that it requires, on an average, three acres of our natural pasture to keep a single sheep throughout the year, while on a single acre of English pasture, (in which Mr. Sinclair detected the twenty-two distinct species of grasses in a square foot,) one ox of nine hundred and sixty pounds was summer-fattened and two sheep winter-fed, we need no other proof to impress upon us the great necessity there is to endeavour to improve our pastures in the old settled parts of the colony, where grass is now such a desideratum. Although I have never seen a close natural pasture in New South Wales, yet I have seen several close pastures of small extent, after the field had been cultivated, the sward being composed here chiefly of the doob-grass and various species of our natives. The doob-grass, therefore, and a mixture of the best of the natives, is highly deserving the attention of the old settlers; as, although a sort of prejudice exists in the colony at present against the former, the extraordinary fecundity of it in the driest seasons, and the

high character it bears in India, render it an object not to be lightly passed by without having good data whereon to form our judgment.

Another important consideration dwelt upon by Mr. Sinclair, in enforcing the necessity of sowing a great variety of grasses, is, the different quantities of bitter extract contained in the various species; which, although forming no portion of the nutritious particles of the grasses, (as it is proved by Sir H. Davy's experiments to be wholly or nearly wholly voided in the dung,) yet performs a most important function in the animal economy by promoting the digestion of the nutritious particles. We all know, in the human frame, the utility of bitters in strengthening weak stomachs, and promoting digestion, and may very readily therefore extend the action of the same principle to stock. Mr. Sinclair mentions an instance of sheep being fed on a field of white clover and cocksfoot, which contain little of this bitter extract, which were all attacked by the *red-water*, and cured by removal to a field abounding with grasses containing a greater proportion of this useful ingredient.—It is to this he seems to

impute their preservation from the rot, as, the more juicy grasses are, the less they comparatively contain of the extract, and the more liable we certainly find them to excite the rot, or scour, which is merely a relaxed state of the animal's bowels.

We observe in this colony that sick sheep and cattle will, while refusing to feed on the grasses, eagerly devour the vines and herbage,—the aromatic and bitter principles in these vegetable substances no doubt acting as a medicine upon them, and improving the tone of their digestive organs. It is from this that we may account for the great partiality sheep have to herbs, because a constipated state of the excretions being essential to their health, nature points out to them what will bring this about; while on the other hand a loose state of the excretions being essential to the health of cattle, we see why the latter prefer wet and the former dry pasture. Whether the extract acts solely as a stimulant, or operates upon the food by some chemical process, is difficult to decide; but probably it is to the former circumstance its good qualities are to be referred. It is now found that salt given to sheep in mode-

rate quantities prevents the rot, as well as many other diseases; and that farmers in the marshy countries bordering on the seas, by shifting their flocks alternately between the fresh and salt marshes, now guard effectually against that disease which their depasturing solely upon the fresh marshes never failed previously to bring on.—It is owing to its stimulating power that we believe salt chiefly to be beneficial; and as salt acts here the part of the bitter extract, we may presume the action of both to be similar.

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LETTER XIII.

Of native fruits we possess raspberries equal in flavour and not otherwise distinguishable from the English. They grow plentifully on the alluvial banks of Hunter's River, and supply a yearly Christmas feast to the birds. Our native currants are strongly acidulous, like the cranberry, and make an excellent preserve when mixed with the raspberry. They grow on low shrubs, not higher than the whortleberry bush. Our cherries are destitute both of pleasant taste and flavour, and have the stone adhering to their outside. Our native pears are tolerably tempting to the look, but defy both mastication and digestion, being the pendulous seed-pods of a tree here, and their outer husks

of such a hard woody consistence, as to put the edge of even a well-tempered knife to proof of its qualities in slicing them down.

The burwan is a nut much relished by our natives, who prepare it by roasting and immersion in a running stream, to free it from its poisonous qualities.

The jibbong is another tasteless fruit, as well as the *five-corners*, much relished by children.

The wild potatoe strongly resembles the species now in use in Europe, but the stem and leaf are essentially different. It grows on the loose flooded alluvial margins of the rivers, and at one period of the year composes the chief sustenance of the natives, having the watery look and taste of the yam.

Of foreign fruits now climatized, we possess a great variety. Here are oranges, lemons, citrons, nectarines, apricots, peaches, plums, cherries, figs, loquats, grenadillos, quinces, pears, apples, mulberries, pomegranates, grapes, olives, raspberries, strawberries, bananas, guavas, pine-apples, and English and Cape gooseberries and currants. Of shell fruits, we have the almond, walnut, chesnut,

and filbert; and of other garden fruits, strawberries, melons, peppers, &c. &c.

Many of the small class of settlers derive a handsome income from the proceeds of their gardens and orchards, but still this point is too little attended to by our colonists generally, and many of our fruits are consequently still both scarce and dear. I have never seen oranges selling for less than a shilling a dozen, while a great part of the year they are double and treble this price, and not even to be had at all for some portion of the season. Peaches, nectarines, and apricots, are most abundant; and when pains are taken in their cultivation, most delicious too; but the greater portion of those offered for sale being the produce of seedlings, are generally hard, tasteless, and noways so tempting as to induce you to try their flavour a second time. Of apples we have considerable variety, many of them most excellent, while the pears you see for sale are generally of a large size, and similar in look and taste to those of Madeira, rich, mellow, and juicy. The bananas and guavas come only to perfection in low sheltered places near the sea; and in Captain Piper's

garden at Eliza Point, I have tasted them quite equal to those of the tropics. Pine-apples require the aid of a frame for their filling out and ripening. Gooseberries and currants are not produced in the low land, the bushes all running to wood, but in the cold mountainous districts of Bathurst and Argyle these fruits come to very considerable perfection. The Cape gooseberry, however, forms a good substitute to the lowlanders for the others. Grapes flourish luxuriantly, but are very liable to the blight, particularly the white ones, if not shaded from the sun and westerly winds. Sir John Jamison considers this blight to be occasioned by a concentration of the sun's rays by the dew-drop, as by a lens, upon the grape, which is thus scorched, and decays rapidly—a series of black specks spreading over it. I cannot myself see how these rays can produce this effect, because the dew is always evaporated before they have much power; while they could only affect the eastern side of the grape-bunch or indeed of the vine, the western being secure therefrom till the dew converts into vapour. This blight is more likely attributable to the wind's shifting suddenly from hot to cold, or to the sun heat-

ing the grapes so much the more during the day if unshaded; and thus from their being too hot at night, they admit the cold air and dew to have a proportionally stronger effect upon them. This supposition seems to derive support from the white grape being more liable to blight than the black, inasmuch as we know that dark bodies both receive heat and part with it readier than light-coloured; therefore, though the white grapes would be longer in imbibing the same portion of heat, they would retain it longer, and consequently feel the effects of the chill night air more. Possibly, however, this blight may be partly owing also to the heat penetrating the white grape with greater difficulty; for while in the black grape it would pass readily on among the juices, and thus expand the whole of the fruit equally, in the white it would, from its difficulty of penetrating, accumulate to a greater degree on the outside, and thus destroy the texture of the husk. Several spirited gentlemen here are endeavouring to supply us with a vinous beverage from grapes of our own growth. Mr. Gregory Blaxland, who stands foremost on the list, has six and a half pipes of Australian wine

this year to fill his cellar with; while Mr. John Macarthur, and Dr. Townson, the celebrated author of Travels in Hungary, are both making zealous efforts in the same way. The wine hitherto manufactured resembles Sauturne in taste and appearance, and a very pleasant wine, generally speaking, it is for a warm climate, from its agreeable and refreshing acidity. Fine preserves are made from our raspberries, quinces, and figs, while our bitter oranges afford us mountains of marmalade, speaking in breakfast-table comparison. Almonds are now pretty abundant, and from these and raisins of your own growth, you may supply your *dessert* without observing a single *dump** in the grocer's bill on that account. In fact, I hope that both raisins and wine will be, before other twenty years pass by, ranked among our *exports* instead of being, as now, among our *imports*. Olives are now much attended to, the most successful propagator being Mr. H. Macarthur, who has reared a great variety from slips and layers.

* The genuine name of an Australian coin, in value 1*s*. 3*d*.

The birds are certainly a terrible pest to our fruit-trees, though not worse either in numbers or rapacity than those of England; on the other hand, they are actually less in number, and as we cannot yet afford the expense of protecting nets and watchmen, the chattering broods riot in free quarters. The oldest, and only hitherto productive olive-tree in the colony, furnished a most abundant crop to the proprietor, for the first and second years, till the feathered epicurists took a fancy thereto, since which he has not been able to bottle off a single olive. In a new garden planted on the edge of a river beside a brush, I have seen, too, the whole of the peas, as fast as podded, and also the beans, devoured by these gourmands. When the peaches are ripe, then is the time to pass in muster all our varieties of parrots, which swarm in flocks among the gardens and orchards at this tempting period, hopping and chattering upon the trees by your very windows and doors as pert and impudent as sparrows.

The great cause of the inferiority of the generality of our fruits is, that the trees have been raised from the seed. It is well known, that if

you sow a hundred seeds of a single species of apple, not one of these will produce a tree bearing the same sort of fruit as the parent, and not five indeed of that number will be worth keeping. Therefore, we must be always creating new varieties, seeing we cannot retain the old ones, for no grafts can be propagated from trees after the period limited for the life of the parent stock. In rearing from the seed, we cultivate the bad varieties as well as the good, and hence the inferiority of the generality of our peaches.

You may raise succulent vegetables of all kinds from seed during nine months of the year at least, so that if ever you lack kail to the pot, do not blame the climate.—Cabbages raised from colonial seed do not bell so well as when raised from English seed, and Cobbett remarks the same as occurring in America. This arises probably from the cabbages being incapable of proper naturalization in a warmer climate, and thus always requiring the seed to be reared in a cold one to bring the plants to perfection. Melons and pumpkins will absolutely overrun you, if you do not give them most bounteous

scope, and you need want neither water nor musk-melons for six or eight months yearly on an average, if you duly time the sowings. Nothing can exceed their rich juiciness and flavour, and the rapidity of their growth is almost miraculous, when a few showers of rain temper the hot days. The pumpkin makes an excellent substitute for the apple in a pie, when soured and sweetened to a proper temper by lemons and sugar. The black children absolutely dance and scream when they see one,—pumpkin and sugar being their delight. To the half of a shrivelled pumpkin hanging at the door of my tent on my first essay in settling, one of our sooty satyrs could do nothing for some minutes but fidget and skip; and with his eyes sparkling, and countenance beaming in ecstasy, exclaim, "Dam my eye, *pambucan*, dam my eye, *pambucan!*" such being the nearest point they can attain to the right pronunciation of their favourite *fruit*.

Being at the opposite pole to you, and the opposite side of that pole likewise, our seasons, our days and nights, are consequently the *reverse* of

yours. When it is your winter, it is our summer; and when it is noonday with you, it is ten at night with us,—the sun rising ten hours earlier here than in England. Again:—our July corresponds to your January, and *vice versa:* our summer months being November, December, and January; our autumn months, February, March, and April; our winter months, May, June, July; and our spring months, August, September, and October, while our *cold* winds come from the *south* and our *hot* winds from the *north.* Many of the stars and constellations situated low toward the north are invisible here, but we can look upon the same milky way and the same Pleiades as you, though we can only *simultaneously* contemplate them, or the sun or moon either, a few hours after their rising with you, and an hour or two previous to their setting. Our summer days are never extended so long, nor are our winter days so greatly curtailed, as yours; while that delightful period of England's climate, the twilight, is here barely discernible, darkness tumbling in so quickly upon the heels of day, that night is fairly commenced as soon as the sun has wheeled himself

out of sight behind the green woody hills in the west.

> "The sun's rim dips,—the stars shine out,—
> At one stride comes the dark!"

being as applicable to our region in the present time as when the "auncient marinere" was tossed about the seas in our vicinity in his ill-fated bark. The lover cannot here compare his mistress to the polar star, to which the compass of his constancy points, for of that polar star he is never delighted with a peep;—neither can the pensive poet, in his solitary musings, exclaim—

> "The leafless trees my fancy please,
> Their fate resembles mine!"

there being no meltings into the mellow tints of autumn; no rustlings of the fast-falling leaves, nor burstings of the buds into life and loveliness in the spring, to deck his rural verses with; one dull green uniformity of foliage existing from year's end to year's end!

We are not moved here with the deep mellow note of the blackbird poured out from beneath some low stunted bush; nor thrilled with the

wild warblings of the thrush, perched on the top of some tall sapling; nor charmed with the blithe carol of the lark as we proceed early afield;—none of our birds at all rivalling these divine songsters in realizing the poetical idea of the "music of the grove;" while "parrots' chattering" must supply the place of "nightingales' singing" in the future amorous lays of our sighing Celadons. We have our lark certainly, but both his appearance and note are a most wretched parody upon the bird our English poets have made so many fine similes about. He will mount from the ground and rise fluttering upwards in the same manner, and with a few of the starting notes of the English lark, but on reaching the height of thirty feet or so, down he drops suddenly and mutely, diving into concealment among the long grass, as if ashamed of his pitiful attempt. For the pert, frisky robin, pattering and pecking against the windows in the dull days of winter, we have the lively "superb warbler," with his blue shining plumage and his long tapering tail, picking up the crumbs at our doors: while the pretty little redbills, of the size and form of the goldfinch, constitute the sparrow of our

clime, flying in flocks about our houses, and building their soft downy pigmy nests in the orange, peach, and lemon trees surrounding them.

Nor are we without our rural noters of the time to call us to our early task, and warn us of evening's close. The loud and discordant noise of the *laughing jackass* (or *settler's clock*, as he is called), as he takes up his roost on the withered bough of one of our tallest trees, acquaints us that the sun has just dipped behind the hills, and that it is time to trudge homewards; while the plaintive notes of the curlew, and the wild and dismal screechings of the flying squirrel, skimming from branch to branch, whisper us to retire to our bed-chambers. In the morning, again, the dull monotonous double note of the *whee-whee*, (so named from the sound of its calls,) chiming in at as regular intervals as the tick of a clock, warns us to rub our eyes and con over the tasks of the impending day, as it is but half an hour to dawn; till again the loud laughter of the *jackass* summons us to *turn out*, and take a peep at the appearance of the morning, which just begins to glimmer beyond the dusky outline of the eastern hills.

In reference to the English winter being the period of our Australian summer, it is singular that, as far as my limited observations extend, a cold winter in Europe should be attended with a corresponding hot summer in southerly latitudes, and a hot summer, again, in Europe, with a corresponding cold winter therein.—The summers of 1825 and 1826, which were both remarkable for the height and duration of their temperature in England, were attended by corresponding cold winters in Australia,—that of 1826 being in fact so cold that many of the cattle died in consequence. This looks as if the sun, when deprived of exerting his fair influence on one part of his dominions, always gives some other portion the full benefit of that degree of heat whereof the former had been deprived. Nature, indeed, seems to follow the same rules in the seasons as we see her follow in the animal machine in a state of febrile excitement;—the intensity and duration of the cold fit of fever being always followed by a corresponding intensity and duration in the hot fit;—and do we not see that if we have a cold winter, we have always a

summer correspondingly hot succeeding it, if such a one should not have preceded?

The diversity of our seasons from those of England produces a corresponding diversity in the periods of our agricultural operations. Here we sow wheat in April and May, and reap it in November; plant maize in October and November, and gather it in March and April; plant potatoes in February and March, and dig them in July; and again in August and September, and dig them in January: having thus, you see, two grain crops and two potatoe crops in the year. What advantages, then, to the agriculturist does not this country hold out! in fact, nothing but the grossest misgovernment can retard its rapid advancement, and I doubt much if even that could materially do so. But, thanks to the wise and enlightened conduct of Lord Bathurst, late secretary of state for the colonies, such things cannot well again occur; for the executive council of his appointment will tend, without embarrassing, materially to give vigour, when required, and counteract such intemperate and hasty measures as the best of men may in a

moment of thoughtlessness or irritation be induced to adopt.

Oats are not much sown, except on the high grounds in Argyle and Bathurst, in lieu of maize, which does not succeed so well in these cold regions.—They are sown in September, and reaped in December, being cut early to prevent shaking; the produce being fully equal in quantity, and as good, I think, in quality as oats in England. The wheat is not much liable to the blight or smut, and very few settlers, I believe, take any precaution to avoid the latter by steeping the seed. The creeping wheat appears to answer this climate best, being sown early, and consequently having its roots deeply ramified, and its stalk and blades well advanced, before the caterpillars or summer heats can destroy or check its vegetation. It tillers well, and spreads out at first over the ground, matting it so closely, with its spikey blades, as completely to protect the soil from the sun's rays, and prevent the evaporation of the moisture soaked into it during the winter. It remains a considerable time in this grassy sward-like state, then all at once shoots up, and proceeds rapidly to maturity.

Its grain is small and hard, and makes excellent flour.

The maize is planted with the hand-hoe, in holes containing five grains at from four to five feet each way in distance. When two feet high, it is hilled up with the same implement, and worked well around to prevent the stalks from being broken with the wind, and to promote its growth. The cobs are pulled off by hand when ripe, and carried to the barn, being spread out thinly till quite dry, and then housed away. The natives often assist in this operation on being rewarded with a good feast of boiled pumpkin and sugar for their labour. You must give them nothing, however, until the day's work is over; as, the moment their appetites are satisfied, they leave off, hunger alone having the power of impelling any portion of them to labour, while a good jorum of *bull* (washings of a sugar bag) or *tumble down* (grog) at the conclusion of the harvest, sends them all merrily and gaily away.—The stalks of the maize are collected and burnt after the cobs have been separated, and the land immediately ploughed again for wheat, which is put in as soon as the ground is ready for it.—

The wheat is cut high, and the stubble burnt off before ploughing, straw being hitherto considered here of little or no value; but the time is fast approaching, when the necessity of an alteration in this system in the older portions of the colony must be apparent to all. Little barley has been hitherto grown, but the wants of the breweries and distilleries, the more abundant crops, and less exhausting nature of this grain, must ultimately lead to its extensive cultivation. The Cape barley is used green as feed for horses, cattle, and pigs. Millet and buckwheat have also been introduced, but hitherto little attended to. Turnips cannot be counted on as a good regular crop, on account of the dryness of the seasons.—Mangel-wurzel, from agreeing with dry weather, will undoubtedly answer better in our climate than the turnip, its crops too are more abundant than the latter, while the severe winters, that are against its cultivation in England except as summer-feed, are unknown in this colony. It does not taint the milk and butter, either, like the turnip. Rape promises to be a valuable food for fattening wedders, as well as fitting the land for a wheat-crop. Lucern is an excellent

green food crop with us, although not much cultivated. It is sown in rows, and cut off as wanted. The best way of improving it is by harrowing it well in the spring, and top-dressing it occasionally. If our wheat likewise was harrowed over in spring, as in England, great benefit would accrue. Although the harrow tears out a number of the plants, it makes the others tiller better; and by loosing the caked surface of the ground, and promoting new chemical changes therein, is of wonderful benefit to the growth of wheat. It is an important advantage to have a flock of sheep; as, by folding them over lands you are cultivating, they afford an excellent manure, without the expense and labour of making, carting, and spreading out dung, as the sheep having to be folded nightly, and the folds shifted nightly too, there is of course no extra expenditure of time or money, the same labour being necessary whether you had a field to manure or not.

The average wheat-crops of the colony do not, I suppose, from the very defective cultivation, exceed fifteen bushels per acre, good lands well cultivated averaging from thirty to forty; and

the maize varying from forty to ninety bushels per acre, according to the quality of the soil and its fit state for the crop. Common sense, however, must soon point out to people that they may raise, with but little more trouble or expense, *thirty* bushels of wheat per acre, by a better system of management, as readily as they now raise fifteen. The great objections to the maize-crop are its exhausting effects upon the soil, from the bulkiness of its stalk and leaves, and the great amount of manual labour required in its cultivation; but then it is such a useful article as food for horses, or for fattening pigs, besides being always so handy in case of the failure of the wheat-crop, to put in on the stubble ground, and thereby secure yourself against a scarcity of food,—and its crop is so productive too, that it will not readily be thrown aside. The hand-labour might be very readily dispensed with, by sowing it in drills like beans, keeping the intervals clear of weeds, and pulverized in summer by the horse-hoe, and earthing up the rows by means of the plough, with the bullocks or horses going muzzled in tandem fashion. The furrows might be made with a simple wooden machine capable

of tracing out two or three at a time, or by a plough, and the corn either planted like potatoes, by the hand, or drilled like beans, covering it in with a very light harrow, having a slide of heavy wood attached behind to smooth all down.

LETTER XIV.

STIFF clay soils, such as the county of Cumberland generally consists of, are named cold soils, from the circumstance of clay retaining moisture very strongly, and the little attraction such soils usually have for heat, on account of the lightness of their colour. This climate, therefore, being both dry and warm, our clay soils are peculiarly suited to it, if a proper course of cultivation be followed. As a proof of the above, in the present year, when turnips and other green crops, as well as hay, have almost totally failed throughout all the light-soiled counties of Britain, owing to the drought, in the heavy clay soils of Essex very little diminution has taken place. Hence it follows, that a proper course of cultivation alone is requisite in the stiff clay soils of New

South Wales, to insure good crops therefrom in our dry seasons too. Deep ploughing and effective pulverization are the two principal points to be attended to, in order to the attainment of this. It is well known that, in a hardened clay soil, after a long drought, the moisture will be found extracted to the depth of three feet and upwards; while in a portion of the same soil kept in a state of complete pulverization, the drought will not have penetrated many inches. The more dense a substance is, the more powerfully does it conduct heat; therefore, clay contracting strongly by the application thereof, the longer this heat is applied, the more compact will the clay become, and the more rapidly will it conduct the heat downwards into the ground. By pulverizing the soil, and rendering it porous, you convert it from a *good* into a *bad* conductor of heat, besides opening its pores for the admission of moisture. Moisture descends through these pores by its specific gravity, and the more lightly it falls, the more deeply will it ultimately penetrate, because *heavy* rains force the particles of earth into such close contact, as to admit of their exerting their cohesive affinities

upon each other, causing thus a caking of the ground in stiff lands and marring the farther penetration of the moisture. As an instance of the strong penetrating power of dew ;—when I slept in a thick canvas tent during the winter and spring months, in this colony, the dew forced its way so effectually that the blankets on my bed, and every thing in fact within the tent, were nearly as wet as the grass outside; and through a small hole into which I could barely thrust a nail, I could see the falling dew penetrating like thick smoke. It is by means of their specific gravity chiefly, that dews and other vapours pervade bodies; and if inroad was thus easily made through the close canvas of a tent, what must be the case in respect to an open, porous, well-pulverized soil! It would inevitably find its way to the very bottom of the porous portion, or as deep in fact as the pulverization extended; and the more comminuted the soil, the more room would there be for the moisture to lodge in. When we see heavy dews lying upon the grassy blades in a summer's morning, and heavy vapours ascending from the sward as the sun mounts upwards, we can readily judge

what the land has lost by not being porous, because, in a well-pulverized field under a course of cultivation, the greater part of this vapour would have descended by its specific gravity through the open pores, and have become intimately united with the soil. Where the soil is not very porous, these dews merely lie upon the surface, and are imbibed chiefly by the attractive powers of the soil for water, whereas in the other description, the water is carried downwards in both these ways. Clayey soils, therefore, lose their moisture, firstly, by the more penetrating power of the heat, which increases in proportion as the clay becomes hardened—thus rendering it a better and better conductor; secondly, by the heat evaporating the water contained in the upper stratum, which stratum again attracts a portion of moisture from the stratum under it, and so on, stratum extracting from stratum, until the moisture to a great depth is progressively forced out of the soil. Now, by pulverizing and breaking the cohesive affinities of these clayey particles, you not only break up the conducting powers of the soil for heat, but also for water, because it is only when clay coheres that it

is a good conductor of that element; and although this injures the soil as regards the water penetrating downwards, yet so little penetrates in this way, in comparison to what descends through simple specific gravity, that the amount is scarcely worth alluding to. But then, you see, when the land is soaked, how much you gain by this, from the conducting powers of the soil for water being so much impaired by the pulverization, that the moisture is not carried off any thing like so rapidly as by the land still in a state of cohesion. By pulverizing, therefore, you convert the soil from being a good conductor of heat and water into a bad conductor of both; and the deeper you plough and pulverize, so in proportion will be the quantity of vapour sucked up, consequently the greater the supply to suit future exigencies, and the more tenaciously retained. Deep ploughing and efficient pulverization thus further the purposes of vegetation nearly as much by these means as they do by furnishing a more extensive and perfect bed for the roots to ramify in, so as to extract nourishment more fully and freely from the soil. But as clays readily collapse into their

former state of tenacity, the next point is, to mingle some substance with them which, destroying their cohesive qualities, will *keep* their pores open for the future transmission of moisture. Sand, lime, and dung, all possess this property; but the first in greatest perfection. Sand, or moderate-sized gravel, will therefore be found one of the greatest ameliorators of our clay soils. Sand and gravel of course impart no fattening quality to the soil, but serve to destroy its tenacity and keep it porous, rendering it a bad conductor of heat, while causing it to admit more readily the watery vapours. Sand, too, is not, like lime or dung, exhausted from the soil by successive croppings; but one good application remains there, while dung and lime require continual renewals.

Pure clay, combined with sand only, will prove but a bad soil, however, for vegetable nourishment. Vegetable matter, lime, and various saline ingredients, are found to be essential, in all good soils, as much as the silicious (or sandy) and argillaceous (or clayey) particles, which constitute the principal proportion thereof. Hence, although, in pure clays, sand will not materially improve their fertility, with-

out manure and lime, yet it will most materially assist the latter, and clayey soils possessing already these calcareous and vegetable ingredients, it will improve much more than dung could. A considerable proportion of our clays evidently contain iron, which, when in the form of a sulphate, is most pernicious to vegetable life, and this we may reasonably conclude to be the cause why these iron clays are so thin of grass and produce so badly on cultivation. Lime decomposes this sulphate of iron (copperas or green vitriol), forming, with the sulphuric acid, the sulphate of lime, or plaster of Paris, an article of the greatest service in all soils; so that the simple application of the lime changes by its chemical affinity to the sulphuric acid this soil at once from a barren to a productive one. Wood ashes, from containing potash, will have similar beneficial effects: but until lime is discovered somewhere in the counties of Cumberland and Camden, or near the coast, where it can be shipped to these places, it can never be applied extensively in the agriculture of these counties. From what I have said before, the advantages of horse-hoeing the crops in summer, and early sowing, will be

apparent,—the former breaking up the hard summer crust. By early sowing, too, you insure the plants having their roots well pushed downwards before the summer heats commence, and the crop so far advanced as to shade the soil from the sun's parching rays, and prevent them extracting the water from it. It is owing to the circumstances I have stated regarding the sowing of crops, that the wheat in England during the two late dry seasons has been an average crop, when all others have failed. Being sown in autumn, its roots extended deeply, and its stalks and blades shaded the ground well, before the heats commenced, and so kept in the moisture.

Another article for improving the soil of our arid climate is salt, or the ingredients of sea-water, all of which are favourable to vegetation when applied skilfully and in moderation. The saline ingredients of sea-water are muriate of soda or common salt, sulphate of magnesia or Epsom salt, and muriate of magnesia or bitter salt. The two first, when pure, are efflorescent salts,—that is, salts which become powdery when exposed to a dry atmosphere; while the latter is a deli-

quiscent salt, or one that liquifies on exposure. These salts produce their good effects on vegetation:—Firstly, by stimulating it. Secondly, by assisting vegetable and animal putrefaction, which they do when employed in *moderate* quantities. Thirdly, by destroying all the grubs, slugs, and other insects in the soil. Fourthly, by keeping the soil moist, from the great attraction of the muriate of magnesia for moisture; and, Fifthly, by preventing the frosts from freezing the soil or the grasses and vegetables growing on it, which they do through the well-known power all saline ingredients have of retarding the freezing of water in proportion to the quantity of them contained in it.

In the clay grounds, therefore, near Sydney, the sea-sand will be found a most excellent manure, by combining the opening, friable-rendering, properties of the sand with the valuable properties of the saline ingredients which it contains; while in the salt-water mud so abundant in the Paramatta river, and various other places, an excellent and almost inexhaustible manure is readily procured. An able practical friend of mine tells me that this mud would make a top-dressing for the grass lands

superior to any compost, while no expense is required in its preparation. Salt itself can never be extensively used here, at the present high price of 7s. per cwt., but when this salt-water sand and mud lie at the very doors of a number of our gardeners and agriculturists, they have no reason to complain.

The Chinese water their rice-grounds with salt water; which indeed is far superior to common salt alone; how easy, therefore, would it be to water our gardens and lands with this in the vicinity of the sea, in the same way as the London streets are watered! and as the refuse of the salt (the most valuable for agricultural purposes) is now thrown away among us, would it not be advantageous to purchase and apply it to agriculture?

Salt manures may be applied most effectually and with most safety to pastures during winter, when the rains will carry them downwards into the soil, and cause them to be equably distributed to both roots and stems of the grasses; whereas, by applying them during the dry weather in summer, they remain on the surface, and act solely upon the blades and stems, which they may in a

great measure destroy. In arable lands and gardens, the saline manures, again, may be most safely applied by harrowing them well in before seed-time. Quick lime sown along with the seed, nay even chalk, will injure the crops; but applied earlier, or after it is sown, will benefit them. Lime has fallen into disrepute in many places on this very account. The effects of light showers and frosts in pulverizing the clods upon ploughed land have been long known, but the way in which this effect is produced is but little understood. Water expands from the fortieth degree of Fahrenheit upwards, therefore *vice versa* contracts downwards, till it reaches forty, but on attaining this point it again begins to expand, and continues to do so till reaching thirty-two, at which point it is suddenly farther expanded into solid ice. Water, therefore, bursts asunder these clods either by its expansion through heat, *above* the fortieth degree, or by its expansion from cold, *under* this degree. When a shower of rain falls upon a dry clod highly heated, the water is suddenly expanded, and the clod crumbles down. Dews produce the same effect. When water, again, is contained in a clod

below the temperature of forty, every degree of cold produced under that point will excite the water to a greater expansion, and tend to force the clod asunder; but on freezing, the water will be more extensively expanded still,—yet the clod will remain firm until thaw commences, when the particles of earth having been thrust asunder out of the verge of their cohesive affinities, will tumble into dust in the thaw.

It was as much by the expansive power of the water as by the unequal expansion and contraction of stones, that Hannibal cut his road through the Alpine rock; and the same principle has been for some years beneficially applied in Sierra Leone, for the purpose of blasting the rocks in order to form the roads there. An intelligent missionary, on passing a place where a fire had been suddenly quenched by a shower, observed the rock underneath shivered to atoms, and taking advantage of the hint, applied it afterwards to the useful purpose above-mentioned.—It is remarked in our light sandy soils here, that during moist and cloudy seasons, the crops are liable to become over-luxuriant; while in hot dry seasons they are completely

scorched up. This is owing to the friable nature of the mould admitting the roots to spread through it readily, in the moist seasons, in quest of food, while shaded by the cloudy weather from the strong action of the sun's rays upon it. The light friable soil gives out its nourishment quicker than heavy land; is sooner exhausted; and parts with its moisture more readily from having but little clay in its composition. In hot dry seasons, though the heat does not penetrate much, on account of the porous nature of the soil, yet this heat is retained more intensely when imbibed by light-coloured soil—retained, too, near the surface,—and, acting here powerfully upon the stems of the plants by concentration and refraction, destroys their vitality. We readily feel the difference of this refraction in passing over a light sandy soil and a dark fertile one; the heat seeming much intenser from the former than the latter, because by the one it is powerfully refracted, and by the other powerfully absorbed. We see shrubs possessed of stems capable of resisting the effects of heat flourish luxuriantly in these sandy soils, when there is any fertility below to nourish them; it being only plants with

tender stems, whose sap is easily extracted, that are burnt up therein in hot seasons. The best remedies for obviating this latter evil in sandy soils are,—early sowing and deep ploughing. By the *first* you enable the wheat to take deep root, shoot well up, and defend the ground from the action of the sun's rays, when summer commences; and by the *second*, enable the ground to store a sufficiency of moisture for furthering the vegetation in that parching season. Water is the medium through which the nutritive particles are conducted through the tubes of the plant. If too abundant in the soil, or too quickly forced through the vessels of the plant by heat, vegetation will be rapid, and the product spongy; but where, on the other hand, there is a deficiency of moisture, the product will be small, though comparatively more compact. It is in the maintenance of a proper *equilibrium* of this kind, therefore, that we must seek the securing of compact grain, the wheat from our upland forest soils being from six to eight pounds per bushel heavier than that from our alluvials, while the wheat from the latter is more spongy, owing to its rapid growth.

LETTER XV.

AMERICA, from the period of her first settlement, has enjoyed advantages in respect to her natural and artificial productions, and proximity to markets, which this country can have no pretensions to; while again this can boast of others, which, in the present state of the two hemispheres, fairly turn the scale of beneficial emigration in its favour. The very clearing of her lands America converted into a source of profit, the timber cut down generally meeting a ready demand, in shape of logs, deals, and shingles, in either England or the West Indies; while from the burning of the boughs she procured the profitable article of potash; and for the tobacco, wheat, and maize, produced by her cleared ground, experienced always a steady sale in the mother country or her West India colonies.

Even after the declaration of independence, these colonies looked to America for the supplying of all their wants, and still do so, in a great measure: while the long wars that have distracted Europe from that period, preventing the raising of the necessaries of life in sufficient quantity to meet their wasteful expenditure, (and the risks which the commercial belligerents incurred, by trading in their own vessels,) made America the general granary, and Americans the general purveyors of otherwise-busied Europe. These natural and artificial causes have given an impulse to the prosperity of America which has been felt to her remotest bounds; but, with the decline of the causes, the effects must feel a corresponding declension also. Her timber is now obtained with greater difficulty and labour than formerly, and the South American states, Africa, this colony, the northern provinces of Europe, and the British North American colonies, all do or will compete with her in this article: while Europe, freed from the paralysing influence of pernicious wars, will soon be able to supply her own wants by products of her internal growth, for which America at one time constituted her princi-

pal dependence. It is not possible that flour, tobacco, and other of her agricultural productions, will continue in such demand in the European states, when they can devote time to raise these things as cheaply themselves; neither is it probable that American vessels will continue to be the carriers of their foreign commerce, when they have created a commercial marine of their own, sufficient for that purpose. The farming of America and New South Wales is, from necessity, primarily of a very different description, by reason of the dissimilar natural condition of the two countries. Here the land being thinly wooded and grassy, the pastoral system is the one principally followed: while, in America, the forests being too close to admit of pasture, they are consequently obliged to thin them for that purpose; but, as this is too expensive to afford remuneration from grazing alone, they must crop the ground first; and by this slow procedure, grazing to any extent is there, for a considerable time, impracticable in new settlements.

I have said before that, as in America they had always a ready foreign market at the begin-

ning for the grain and other productions of their cultivated grounds, therefore, the raising of these articles for exportation afforded a profitable employment as long as land could be acquired by the new settler near enough to a shipping port,—so, whereas, in New South Wales there being never any farther market for the above than what arose from colonial wants alone, the pastoral system was the one which this peculiarity of circumstances led to the adoption of, in conjunction with the powerful recommendation which the eligible state of the country for pastoral purposes obviously afforded. An export was wanted by both countries—this America found in the cultivation of her soils, and New South Wales in the proceeds of her flocks. In America, it was compulsory to commence at once the cultivation of land, as the aboriginal state of the country unfitted it for pasture; and here the pastoral state was no less imperative from the want of a foreign market for cultivated productions, while the aboriginal state of the country rendered that system of easy attainment.

On contemplating the histories of all the nations of times past, as well as those of the present

day, we find they have been originally pastoral people; cultivation is more allied to, and will naturally follow, a condensation of population; but to *force* it out of its natural course is like forcing the infant to conform to the diet of the man.

The pastoral is therefore the natural, the agricultural the artificial system. The pastoral requires less attention and labour, but more capital, when a large return is speedily wished for; while that return is more distant, but more progressively large and certain, than in the other. In agriculture, if your land is clear of timber, you have just to put in the plough, and in a twelvemonth reap the profits of your labour; thus, no great capital is required to commence with, if trees do not interfere; but in the pastoral you must expend a considerable sum in the purchase of breeding-stock, and wait for three years before you reap a proper interest for your capital, because stock cannot be sold to advantage earlier. It was thus that many individuals in Van Dieman's Land, and several in this colony, were rapidly enriched during the periods of the great demands for grain. They had little or no capital, but a naturally clear ground to commence

upon. Small grants in America were thus the most obviously proper, because the only productive portion of the land was the *cleared* portion, the overplus (being unfitted for pasture) remaining, in a manner, a barren waste; whereas here large grants were obviously the best, because, what was not required for raising your necessary subsistence, could be productively appropriated to pasture, being naturally fitted for the grazing of stock. It does not follow, because grants are at first necessarily large, that the land should thus always continue in masses in the possession of large proprietors; for as new lands become remote, and population condensed in the old settled parts, artificial grasses and cultivation of green crops will unavoidably be introduced in the latter to sustain more stock, and divisions of the large grants among the proprietor's family naturally follow, to admit of a more perfect cultivation than a large tract of land can possibly receive from the capital and superintendence of a single individual: —no wealthy and enterprising person will readily *rent* a farm in a new country, as long as the ambition of acquiring one of his own at a reasonable

distance from a market, and at a cheap rate, has a chance of being gratified; therefore, a considerable portion of a large tract would thus otherwise remain comparatively unproductive, until men of capital found it more advisable to *rent* land in the old settled parts, than *purchase* it in the new; at which period a reaction would naturally take place, and land begin again to accumulate.

Here, as I observed before, agricultural labour is necessarily low by reason of the supply being great, and the fixing of the remuneration in your own hands. You may say that these labourers are inferior to the free English ones: but individuals who have farmed largely in England assure me that the convict labourers, with proper management and treatment, will do quite as much as the others, and they are generally more civil, "on compulsion." You will find kind treatment and an even firmness of purpose, with moderation in temper, answer quite as well with them as with English labourers, in pushing your work on. It is only at the first set-out that you meet with any particular annoyance from them; by studying their comforts, and not unnecessarily outraging their

feelings, you after a while attach them to your interests and accustom them to your habits.

Even free farm labourers may be hired here at from twelve to twenty pounds per annum, furnishing them besides with a peck of wheat and seven pounds of beef by way of weekly ration. In America you must, like all distant settlers there, have a wife able to spin your own flax and wool; to weave them; and afterwards to make them into vestments, before you can calculate on enjoying much comfort; while in Australia you can have all your wool spun and manufactured by private individuals, or by the government, on paying for the labour in the same material; so that you not only soon *feed* but *clothe* your servants from the proceeds of your farm without the intervention of cash outlay,—while, if you stock your land adequately at first, the annual sales of your wool, wedders, bullocks, butter and cheese, will soon furnish coin enough to supply all those family wants which *coin* alone can purchase, leaving besides a yearly increasing surplus, to form a sort of sinking fund for the improvement and beautifying of your farm.

No new settler can compete, in supplying the government demands for grain, with those inhabiting the old settled parts of the colony, on account of the distant carriage and bad roads. He may for a time, however, find a market in his own vicinity, among those who follow his footsteps; but, generally speaking, if he grows enough for his own wants, it is as much as it may be politic to attempt; looking to future remuneration in the increase of stock, annual sales of wool and fat wethers, dairy proceeds, rearing of pigs for salting as pork, (or converting into bacon and hams,) and the raising of tobacco. It is not common, nor would it be advisable, to attempt all these conjointly; but I name them as being articles which afford very profitable sources of emolument to many individuals here. The rearing of fine-woolled sheep, as affording the most certain and permanent revenue, ought undoubtedly to be the principal object; but all the others do now, and are likely to continue to, pay well. Butter is seldom less than 2*s.* 6*d.* per pound in the Sydney market, and colonial cheese fetches readily from 8*d.* to 1*s.* Several individuals, to my own knowledge, make

from 300*l.* to 500*l.* per annum by their dairies alone. Our cheese improves, and will, I think, soon equal the common run of English, and our winter-made butter is unsurpassable. A good deal of pork is salted in the colony, and the raising it is a very profitable article when properly attended to. Salt pork is in abundant demand at 5*d.* and 6*d.* per pound, and hams and bacon at 1*s.* Tobacco is only coming into repute as an article of culture, and from the unskilful manner wherein it is cured, does not equal the foreign; but as there is a duty of one shilling per pound on the latter, and we may expect to improve by experience in the curing, I think in a few years the colonial tobacco will, in a great measure, supersede the foreign; and as all the lower classes are determined smokers, there is consequently an immense consumption.

Butter is made in the dairy farms in the cool months, and cheese in the hot,—the former being either slightly salted and sent at once to market, or kept till summer, when prices advance. It is found that breaking up the curd does not answer here as in England, while the cheese requires to

be dipped for ten minutes in boiling whey, to harden the exterior, and prevent the butricious particles from oozing out. Soaking the cheese, too, occasionally in pickle, destroys the eggs of insects deposited on its crust, and prevents the formation of maggots. The best kind of dairy is that constructed above-ground with a veranda around to shade the walls, and covered with a double roof, or else with a thick coat of thatch. Thatched cottages are indeed by far the coolest of any in this climate, from the thatch being so bad a conductor of heat. By placing a can of water newly drawn from the river, in summer, in a thatched house, you will in an hour or so find it materially cooler. The dairy requires to have abundance of windows, screened so as to prevent the ingress of dust, and so situated as to admit the current of air passing through, just to skim over a little above the surface of the milk.

The colony being still in its infancy, but few articles which it is capable of producing have yet become objects of public attention, and these have been brought into notice only by the exertions of a small group of spirited individuals.

Mr. John Macarthur has the honour of introducing the fine wool husbandry; Mrs. Howe and Mrs. Rankin first called the attention of the colony to the lucrativeness of the dairy system, by the high prices and ready sale they obtained for their excellent butter and cheese; to Major Goulburn, I believe, we are principally indebted for tobacco cultivation; and to Messrs. M'Dougal, Pye, and Squires, for the extensive culture of oranges and other species of fruit for public consumption, from which they have derived a very handsome revenue. As population thickens, and cultivation advances, other articles will be brought into notice, and the vast resources which may be drawn from this fast-rising colony farther developed.

Fine wool being the article which has chiefly raised the colony to its present high station, and the article too most befitting the emigrant's attention, sheep-husbandry claims a particular portion of regard. The sheep here are divided into flocks of about three hundred breeding ewes, or four hundred wethers, in each. Every flock has a shepherd, who takes his sheep out to graze before sun-rise in the morning, and brings them

in after sun-set at night. He keeps always before the flock, to check the forward among them from running onwards and wearying out the old, sick, and lame; making all thus feed quietly, so as to keep them in good condition. In summer, he sees too that they have water during the heat of the day; and in drawing up under a tree for shade when it is too hot for feeding, he passes occasionally gently among them, spreads them out, and makes them take a fresh position in as small groups as possible under another tree, because, when they remain crowded too long together in one place, they are apt to become broken-winded. It is a rule, that sheep should never remain in one spot so long as to paddle the ground much with their feet; and hence, in riding round your sheep-stations, you have something whereby to judge whether or not your instructions are attended to. The shepherd takes out his victuals with him, and is required to be on the alert all day long, to prevent the sheep from being lost in the woods, or the native dogs from pouncing in among them. They must always be driven slowly to pasture, and if you perceive that the shepherd can walk quietly among

them without disturbing them, you may set him down as a gentle and a careful man; for if he uses his flock harshly, they will be naturally terrified by him. Three flocks are always penned together in contiguous hurdles under the charge of a watchman, who counts each regularly *in* at night, and the shepherds again count them *out* in the morning;—so that they form a regular check upon each other, and prevent losses from carelessness or depredation. The watchman has a small weather-proof watch-box to sleep in, and is assisted by a watch-dog: he keeps up a good fire, which generally deters all native dogs from approaching the fold. The hurdles are made of light swamp oak, iron bark, or gum, measuring seven feet long, with five bars, so close together that a young lamb cannot creep through, and usually cost about 1*s.* 6*d.* apiece. They are shifted to fresh ground daily, being sloped outwards and propped together by means of forked sticks, driving a stake through between the bars here and there to keep the hurdles firm and prevent the wind from blowing them over, little support being derived from their feet, which are pressed but

slightly into the ground. All branches of trees are carefully removed from the hurdled grounds before the sheep are driven in, to prevent any of the latter being staked; the hurdles too are never pitched where ant-hills are, or under a tree with rotten boughs upon it, while the trees with black bark are carefully denuded thereof, to prevent discoloration of the wool.

Sheep are shorn in November, the rams having been put to the ewes in October, the lambing-time being March and April, (corresponding to your September and October). This deviation from the English practice of spring lambing is owing to the breeders finding that the pasture is particularly good in the autumn here from a sort of second spring taking place, while the lambs stand the cold better than the heat, and are less annoyed by the gadflies. Sheep are subject to few diseases in this climate; and (what is extraordinary) are not at all liable to *fly-blow*, even though wounded in shearing; while ticks are only found among newly-introduced sheep, and soon disappear after they have pastured a short time on our grasses. This freedom of the sheep from that pest, the *fly-*

blow, so common in England, is the more extraordinary, as meat is blown here, as soon as killed, by our bottle-flies; nay, even the very meat roasting on the spit, or smoking on the table, not always escapes. I ascribe this partly to the great dryness of the climate; as I observed once, in some summer-dropt lambs attacked with milk blotches, that in wet weather they were immediately fly-blown, while in dry weather they escaped. Scab is the most common disease, and is brought on by infection and poor keep. A little attention and knowledge on the part of the shepherd, however, will always keep this malady from making head among the flock, and eradicate it as soon as it appears. The symptoms of biting at the wool, rubbing frequently against trees, and scratching the itching part with their feet, proclaim something wrong, while a white spot in the wool points out where the evil is to be found. Cutting the wool close over the infected part; scratching it a little till it bleeds; and bathing it with strong tobacco-water and turpentine,—a bottle of which every shepherd should always keep beside him,—soon put an end to the disease. Giddiness chiefly

attacks fat sheep, and the sooner you kill them afterwards the better—as I have never seen any remedy yet applied do good. Foot-rot is rare, and easily remediable; while that terrible disease, the *rot*, was almost unknown till this year; and though most destructive as far as it extended, was confined to a very small portion of wet-lying pasture in the Bathurst district, better adapted to cattle than sheep. The *rot* is simply a diarrhœa brought on by moist pastures, the grass whereof, being watery and aperient, ferments in the stomach, and consequently throws the whole abdominal canal into disorder. It succeeded, in that portion of country scourged by it, to a long fall of heavy rains, which supersaturated the blades of grass. Medicine can be of little avail when this malady becomes extensive, and is indeed merely thrown away unless the exciting cause be removed;—moist pasture is this exciting cause;—therefore, a removal to a dry hilly country, where shrubs and herbs abound, is indispensable, keeping the sheep in the fold during morning till the dew is off the grass, and giving them a little hay before sending them out to feed, to assist in checking and drying

up, as it were, the complaint.—But the diseases of sheep and cattle in this colony are indeed scarcely worth commenting on; so rarely do fatal effects result, most of the sheep dying of sheer old age. How different is this to what we observe in European countries!

The sheep are driven swimming through some clear stream for two or three mornings successively before being washed, which softens the grease, and materially assists in cleansing the fleece. They are likewise driven through and through the river on the morning of the washing-day itself, and allowed to stand dripping in the pen till wanted: but at Mr. Macarthur's establishment each sheep of late is dipped in a caldron of warm water previous to being washed, by which means the grease and dirt are still more effectually softened, and thrown out from the fleece.

A pen is made on the washing-day close to the part of the river wherein you mean to wash your flock, always choosing a place where there is a clear sandy bottom sufficiently deep for the sheep to swim. The lower washer takes hold of a sheep, gives it a good rubbing, and passes it on to the

man above him, who finishes its cleansing, and forces the animal to swim up the stream through the clear water, to rinse its fleece still farther before it lands. A flock daily is the customary quota washed, the landing-place being bedded with mown grass, if sandy;—and the flock fed and penned closely together in straw-bedded folds, or on heavy grassy land, till the fleece is dry and the yolk sufficiently risen up in it to admit of its being shorn.—That operation performed, the fleeces are rolled and carried to the wool-house, being sorted according to their qualities into different bins, and weights being placed above them to press them down. The wool is shorn in the sheep at one year's growth, and in the lambs at six months',—which causes Australian lamb's wool to bear such low prices from being so short in the staple.

The poorer the sheep are, the more prolific; and the finer does their fleece become: they should not, therefore, be kept in too high condition. Our old ewes bear the finest fleeces, although small in bulk, short in staple, and not near so strong as those of healthy young sheep. The wool of Australia is particularly prized by manufacturers

for its great strength of staple, which is wholly attributable to the uniform health of our sheep, and the constant exposure of the fleeces to the clear dry air of our climate,—the fineness of the Saxon wool being chiefly produced by *artificial* means; namely, clothing the flocks in winter, and housing them a great portion of the year. The Saxon wool may be compared to grass that has been secluded from the sun, which presents a sickly appearance, and wants that elasticity and strength possessed by grass exposed freely to sun and air. Saxon sheep, therefore, cannot be depended on as useful imports into this colony, unless you secure the very purest breeds; because the wool will naturally become coarser at first, unless you continue the same artificial treatment which the sheep were accustomed to in Saxony. This climate is proved to *increase*, unassisted, the fineness of the wool-staple—a circumstance ascribed by some to the native grasses—by others, solely to the climate; and by others again to the clay soils whereon the sheep are usually pastured, which are said by English sheep-farmers uniformly to improve the quality of the fleece.

By far the greater portion of our sheep are still cross-bred. In fact, until within these few years, Mr. John Macarthur was the only gentleman in the colony possessing the pure bloods, but importations have latterly taken place to such an extent, that the pure Merino breed will be able through their rapid increase to supply all our flocks with *choice* rams. As however the proprietors naturally keep these at present themselves, and dispose only of the *worst*, it is often better to breed from fine cross-breds than from inferior rams of pure blood. The nearer the ewes arrive at perfection of breed, the fewer twins are produced; and consequently, the slower will your flocks increase;—it being a rare circumstance for a pure-bred ewe to have two lambs at a birth. The more perfect the breed, too, the smaller becomes the ewe, and consequently the smaller and lighter (although the finer) the fleece. The average present weight of the fleece of our cross-bred ewes and wethers is three pounds, but of the pure bloods only about two pounds,—the ewe fleece of the latter seldom exceeding one pound and a half. The highest price yet obtained for our wool has been

10*s.* 6*d.* per pound, and this occurred only once, the prices latterly for our finest specimens not having exceeded 7*s.* 6*d.*; and Mr. John Macarthur is the only individual who has hitherto obtained these sums, from his having been, I may say, the sole possessor of the pure breeds until the last few years.

Only one bale, or about two hundred and fifty pounds, annually, has for these several years reached this price of 7*s.* 6*d.* per pound, but a number of other bales have obtained from 4*s.* to 6*s.* at the public auctions in London, and these latter you must recollect are wools in the *fleece*, whereas when you hear of Saxon wool bringing 10*s.* per pound, it should be borne in mind that it is all sorted before being sent to the English market, and that the *picked* part only of the *finest* fleeces reaches this value.

In 1813 the number of sheep in the colony amounted to 6514, and in 1821 to 119,777; but no great faith can be placed on the accuracy of these musters. That the increase of sheep is most rapid in all countries, is well known; but it is more particularly so here, where few fatal dis-

eases attack our flocks, and where we have no inclement seasons to thin them. The following account of the annual exportation of one of our most eminent wool-growers, with the prices realized at Garraway's, will serve to elucidate this subject:—

1821.

	lbs.		s.	d.	£.	s.	d.
	655	at	2	11	90	0	5
	579		2	10	82	0	6
	683		2	11	99	12	1
	438		2	5	52	19	4
Total	2355 *lbs.*				£ 324	12	4

1822, wool-ship lost.

1823.

	lbs.		s.	d.	£.	s.	d.
	734	at	2	4	89	16	0
	805		2	4	93	18	4
	762		2	3	85	14	6
	770		2	2	82	10	0
	817		2	0	81	14	0
	872		2	2	94	9	4
	798		2	0	79	16	0
	838		1	11	80	6	2
	642		2	0	64	4	0
Total	7038 *lbs.*				£ 752	12	4

1824.

lbs.		s.	d.	£.	s.	d.
420	at	2	5	50	15	0
392		2	6	48	15	0
442		2	6	55	5	0

	lbs.		*s.*	*d.*	£.	*s.*	*d.*
	191	at	2	11	27	17	1
	448		2	9	61	12	0
	197		2	10	27	18	2
	204		2	10	28	18	0
	429		2	10	60	15	6
	426		2	11	62	2	6
	189		5	0	47	5	0
	422		3	1	65	1	2
	195		3	2	30	17	6
	334		3	1	51	9	10
	163		2	8	21	14	8
	439		2	5	53	0	11
	622		2	2	67	7	8
	458		2	3	51	10	6
	631		2	1	65	14	7
	180		2	4	21	0	0
	307		2	4	35	16	4
	381		2	2	41	5	6
	434		2	7	56	1	2
	412		2	9	56	13	0
	468		2	10	66	6	0
	465		2	9	63	18	9
Total	9273 *lbs.*				£ 1258	14	8

1825.

lbs.	at	*s.*	*d.*	£.	*s.*	*d.*
414		1	11	43	17	0
361		1	6	27	1	6
420		1	9	36	15	0
427		2	1	44	9	7
395		1	10	36	4	2
406		1	11½	39	17	7
421		2	2½	46	9	7½
411		2	1	42	16	3
409		2	0	40	8	0
418		1	8	34	18	8
420		1	10	42	13	4

lbs.		*s.*	*d.*	£.	*s.*	*d.*
414	at	2	0	41	8	0
430		1	11½	42	2	1
424		1	11½	41	10	4
430		2	1	44	15	10
393		1	10½	36	16	10½
389		1	10	35	13	2
424		1	8	35	6	8
349		1	9	30	10	9
351		1	10½	32	3	6
390		1	8½	33	2	11
169		2	5	20	8	5
172		1	10	18	7	8
432		1	9½	38	18	8
238		1	9	20	8	2
461		1	10	26	13	7
442		1	9	38	13	6
432		1	9	21	19	4
444		1	8	37	0	0
327		1	10	29	19	6
229		1	10	20	19	10
850				*not known*		
4027 *lbs.*				£ 252	13	3
Grand Total of 1825 } 12692 *lbs.*				£ 1082	10	6

The great difference between 1821 and 1824 arises from the sheep having been removed to better pasture, having been better taken care of, and more attention paid to the shearing and packing of the wool, in the latter year. During the years 1824, 5, and 6, from three to four

hundred fat wethers were annually disposed of to the butcher, averaging at least 400*l.* per annum, which requires to be added to the sum derived from the wool, to show the exact revenue produced.

Without reference, however, to these wethers, the annual increase of the wool will be found to be about thirty per cent during the years 1824 and 1825, and consequently the increase of the sheep may be calculated at that ratio too. Supposing, therefore, the sheep in the whole colony to continue increasing at the above rate, the amount of wool exported to England (which this year exceeds half a million of lbs.) will in 1840 reach to between thirty and forty millions of lbs. The expense of shearing, packing, freight, insurance, and brokerage of wool, is calculated to be defrayed at about 6*d.* per pound, so that the net annual proceeds from the above gentleman's flocks for 1824 would be (after deducting 231*l.* for expenses and adding 400*l.* on account of wether sales) 1400*l.* sterling and upwards.

Money derived from flocks is always considered *clear gain,* because the other proceeds of the farm will more than defray all the ordinary farm expenses

after you have got matters a little advanced upon it.—The price of the best cross-bred ewes varies at present from 4*l.* to 5*l.*, the rise having been progressive for some years back, on account of the great demand for breeding ewes by the numerous new settlers, and enhanced more particularly of late by the expected demands of the Australian company.—Pure Merino rams vary from 15*l.* to 25*l.*, but some have far exceeded even this ratio.—The coarser kind of ewes sell at about 1*l.* 8*s.* a head.—By observing the wool account, it will be seen that the prices of 1825 were much lower than 1824, which arose from the great influx of European wool at that period, depressing the prices, so that the 850*lbs.* at the bottom of that year's exportation were retained and afterwards disposed of by private bargain *in the country*, at prices superior however to the greater portion of the lots. About 2*s.* per pound may be fairly calculated as the average profit which our principal fine wool-growers derive after paying all the expenses before spoken of; but I do not include Mr. John Macarthur in this list, because his wool is necessarily much finer, on an average of his flocks, than that

of any other settler—on account of his being so long almost the sole possessor of the pure Merino breed. Averaging, therefore, the flocks at three hundred each, with two and a half pounds as the weight of each fleece, at a clear profit of 2*s.* per pound, the present value of each fleece will be 5*s.* and the wool of a whole flock 75*l.* yearly. By increasing the fineness of the fleece, we diminish its weight; but the increase of value far more than compensating for this diminution, it is of material importance to insure it, inasmuch as the expenses of a pound of coarse wool amount to as much as those of a pound of fine wool in its transmission to, and sale in, England. The *settler* does not receive his remittances on account of wool-sales either in bills or in money, which he directs his agent to convert into various descriptions of goods, on which he has again a profit in the colony of from fifteen to twenty per cent.

I mentioned, before, that three acres, on an average, were required for the yearly support of a single sheep, making thus the annual value of an acre of sheep-pasture here not quite two shillings, when referable to the return of wool alone; but

as the value of the fleece increases, so likewise will that of the pasture.

It is quite impossible for any country in Europe to compete with us in the production of this article; for even if we never clear more than two shillings per pound for our finer sorts, we shall consider ourselves not badly paid. There are so many million acres of pastoral land in this colony now known, and in all probability existing likewise in its cool southerly latitudes yet unexplored, as to warrant a conclusion, that for another century at least there will be sufficient to answer the demands of the whole increase of colonial population, as well as the probable influx of emigrants. In fact, what are we to do with the millions of pastoral acres scattered over our continent, but to *graze* them in some way or other? —for to *cultivate* them will be impossible for some centurys to come. How then can the crowded population of Europe successfully oppose us in the growth of fine wool? when the land costs us, as it were, nothing, and we have farm-labour at the slightest expense imaginable.

The three first years are the only ones of positive

outlay to an active judicious man, and certainly they are often years of severe trial; but these once overcome, the remainder (so far as pecuniary matters are concerned) are all years of sunshine and pleasure. For sheep to continue to pay well in thickly-peopled Europe, the *flesh* as well as the *fleece* must be taken into account;—but Merino mutton will never become popular where so many breeds famed for the superior juiciness and fine flavour of the meat already exist. The Merino cross-bred wethers seldom exceed sixty pounds, while their hind-quarters are small and ill-shaped, and the meat dry and insipid in comparison to that of other breeds. An old English shepherd, speaking to me regarding its qualities, observed, "If you cut into a quarter of roasted Merino mutton, it shrinks so that you would suppose a dinner had been made out of it before a single mouthful is tasted; but after cutting into a leg of Down mutton, you would have some difficulty to find where the knife had been."

The only animal destructive to our sheep here is the native dog; but the settlers consider this

intruder rather a blessing than a curse, inasmuch as fear of him makes the shepherds more careful of their flocks,—not knowing when the destroyer may come among them; and hence it results that fewer sheep go astray or are stolen.

Bells are beginning to be introduced, and certainly promise to be a great acquisition to our sheep-husbandry. By having six or eight of these attached round the necks of the stoutest leaders, you keep the flock well together, while you have warning of any native dog breaking in among them when grazing or in the fold, or of any attempt at stealing them when penned. Besides, on losing a flock through the shepherd's negligence, they would be more easily found. I doubt indeed if a native dog would approach a flock with bells to their necks, because any unusual noise frightens these cowardly prowlers.

Sheep are apt to stray and lose the flock, from being so very short-sighted that they cannot descry their companions at any distance; the senses of hearing and smelling being what they mainly trust to, in searching for their lost com-

rades. I have seen a stray sheep often run bleating up to within a few yards of a man with a white dress on, before discovering that it had no kindred claim upon him.

LETTER XVI.

OUR horned cattle amounted in 1813 to 21,513, and in 1821 to 68,149. Our breeds are derived from the Bengal buffalo variety, with smooth skins, short snail horns, and humpy shoulders; and from the various English breeds that have been at different times imported. Mr. Marsden's cattle, assimilating to the English polled Suffolks, with smooth glossy skins, are good and rich milkers, but require luxuriant feed. Messrs. John and Hannibal Macarthur's are of the red Devon and Lancashire breeds, having long spreading horns; being hardy feeders; fattening easily; and proving good dairy cattle, and active workers when broken in for farm-labour. Mr. Throsby has the largest breed, having killed bullocks weighing 1400*lbs.* fed off native grass on his estate of Bong Bong, in Argyle, where

the land is moist and grass luxuriant. Mr. Jamison has also a pretty pure breed producing heavy carcases and excellent beef.

The increase of our cattle has, like that of our sheep, been most rapid since the opening of the Bathurst, Argyle, and Hunter's River districts by Governor Macquarie during the latter period of his administration. The largest herds are kept in these districts, some at a distance of two hundred and fifty miles from Sydney; and the fatted cattle only driven down to the capital as wanted by the butcher. Most of the cattle are pastured upon ungranted land held under permission of the government by what is called a "ticket of occupation." Since droves often come from the farthest parts of Scotland and Ireland to the London market, *and are sold there at a profit*, it will be evident that two hundred and fifty miles is no unprecedented distance: most of the old wealthy settlers, however, have homesteads not far from Sydney, to which they bring their fat cattle and wethers for sale, obtaining by this means *good prices* from the butchers; whereas the settler who has *no homestead* is necessitated to take what he

is offered if he drives his fat stock down merely on speculation. A class of *dealers* between the butchers and settlers is certainly much wanted; and I do not know any thing that would pay better, if an active competent man took up this calling. By leasing a large farm within thirty or forty miles of Sydney, and cultivating it in the English mode,—raising a sufficiency of hay and green crops to fatten his purchases,—a certain mine of wealth would lie open to him, while a most essential benefit would be conferred upon the distant settler.

Numbers rather than quality having heretofore been the principal object of the settler's attention, the breeds have undoubtedly deteriorated; still it is matter of astonishment to all strangers how fine our stock generally is, and in what excellent condition all our graminiferous animals are, even during the greatest droughts, when feed is every where scanty. This fact clearly demonstrates the nutritious character of our native grasses even in their parched-up state: indeed, as long as water lasts, animals suffer comparatively little here from poor keep.

Our cattle are quite good enough to form an excellent breed, by a proper selection of the breeders; and as the finest-formed animals are found to fatten quickest, and upon the least food, attention to improvement in this respect is well worthy the notice of those whose range of pasture is limited, and ought by no means to be lost sight of even by others; for by getting into a good breed early, you afterwards save much trouble.

In large herds, the bulls, cows, calves, and bullocks, usually all run promiscuously together,—the heifers often dropping calves before eighteen months old, and the calves becoming as wild as deer, and almost as fleet too, the herd in fact requiring to be *hunted* into the stock-yard by bands of horsemen, and thence culled as required. A stock-yard under six feet high, will be leaped by some of these *kangaroos* (as we term them) with the most perfect ease, and it requires to be as *stout* as it is *high* to resist their rushes against it. When an ox is wanted for killing or branding, a noose is thrown over its horns, and the rope carried round a post, whereto it is dragged. The calves are cut first, and after being healed, are

muzzled, weaned, and branded. The brand is usually applied to the hips; while the muzzle is merely a square piece of thin wood hollowed out in the middle in such a way, that two sharp points approach each other like crab's claws, between which the septum of the nose is thrust, and one of these claws made to perforate it, so that the muzzle hangs dangling over the mouth, and prevents sucking—though it does not impede feeding.

It is a most important point to have your calves housed every night, for six weeks at least, and handled constantly, to tame them; by which means they remain quiet ever afterwards; but in very large herds this cannot possibly be done. The young heifers in their first calf, too, ought to be broken in to milk, as, if that period is passed over, they are afterwards most untractable milkers:—by *roping* two or three times, they are soon taught to walk quietly up to the milking pail. Their near foot is usually fastened to a hooked post, driven into the ground, to prevent kicking during milking, and the calf allowed to run with the mother through the day, shutting it up in the pen at night.

Our milk-dishes are generally of coarse earthenware made in the colony, but the double-tinned ones are by far the best, as the milk not only keeps much cooler therein, and is less liable to turn sour, but they *last much longer*, a great point with a distant settler, who cannot replace the broken ones so readily as in England.

Cheese is made in the summer months, and butter during the cooler portion of the year. In the hot summer days, our new-churned butter resembles a thick oil, though still retaining the butricious taste; and though as sweet as any I ever tasted in England, it certainly fails in that rich yellow tint which most of the English pastures impart. You have at this season often to churn three or four times before you extract all the butter from the milk.

You will buy well-bred two-year-old heifers in calf for eight or ten pounds; milch cows at from twelve to fifteen guineas; young bullocks of two or three years, weighing six or seven hundred pounds, for seven or eight pounds; and old broken-in working bullocks at from ten to thirteen guineas.

The bullocks are by far the best animals for

draught, at least in the present state of things. They do not require the expensive keeping of the horse; are less than a fourth of the price; when any accident befalls them, may be slaughtered and salted; and on their getting into years may be fattened for the butcher: while the horse is yearly becoming less valuable, and is ultimately worth only the price of his hide. Oxen are said to be slower than horses; but this depends entirely upon your manner of proceeding. If you select a lively, strong bullock, and teach him a good quick pace at the commencement, his speed will prove little short of that of the horse. There is no necessity of either corn-feeding, curry-combing, or doctoring bullocks, as horses; while, on long journeys, you fetter their fore legs at night, and allow them to feed till morning on the adjoining pasture, then yoke them to again, nearly as fresh as ever.

There has been much disputing about the respective superiority of yokes and harness, but certainly yokes appear to carry away the palm completely. All that you have to procure with respect to them are the two steel bows and the chain, the wooden part being easily made on your own

farm; and the whole apparatus is so simple, so cheap, and so easily kept in order, compared with the harness, that those who have tried both will not be long in throwing the latter aside. I even conceive that the yokes give a greater purchase than the harness, because the power exerted is one which both lifts and impels; while the neck is the strongest part of a bullock, and the yokes do not impede the motion of the shoulder-blades, or check respiration, as the collars undoubtedly must. I have seen four bullocks, in yokes, draw a heavy dray with 24*cwt.* of wool along one of our indifferent roads, with the most perfect ease. Harness, however, is absolutely necessary for the shaft-bullock, when setting your carts to work.

Beef is supplied by contract to the government at three-pence per pound, and retailed by the butchers in Sydney at something about double this price. Advertisements for tenders are published by the commissary quarterly, and the lowest tenders accepted, the price being stated at so much per pound, the hides, horns, and offal, appertaining to the tenderer. Beef may be salted here all the year round by a little attention. You kill the

bullock after dusk, and cut him up and salt him before daylight, covering the cask so completely that no flies can get access. In four days the brine must be drawn off by a spile at the bottom, boiled and skimmed, to extract the blood from it, and when cool poured again over the meat. This will require to be done possibly three times, and if the *natural* brine does not cover the meat, *artificial* should be provided, as no flies can injure it as long as it is under the brine, an object farther accomplished by laying boards over it and stones upon the top of these. The larger bones must be cut out, as also all the bloody parts; the thick pieces cut into, and the salt well rubbed in. Captain Cook's method of salting while the meat is hot deserves a trial, as it is evident that the salt must penetrate more readily then, when the fibre is flaccid and the pores open. The hides and horn-tips might afford profitable articles for exportation, if properly attended to, but the first are considerably injured by the brand being upon the finest portion of them, and generally so mangled in skinning as materially to impair their value; while the horn-tips are almost always thrown away. The hides

formerly fetched as high a price as 6*l.* 10*s.* apiece; but may now be bought from 5*s.* to 10*s.*: yet while at the former enormous price, shoes manufactured from them were sold at 14*s.* a pair, which are still charged 10*s.*—so little has the relative price been affected!

The cattle in this colony are remarkably healthy, and no such thing as any of the dangerous diseases common in England known among them, so that breeding proceeds rapidly almost without diminution by death, except through the medium of the butcher. A giddiness sometimes attacks them, which speedily yields to bleeding and laxatives, and this is the only disease natural to the climate that I believe they are liable to.

The horses in 1813 amounted to 1891, and in 1821 to 4014. We have few thorough-bred cart-horses, almost all having a cross of blood in them, which makes them generally unsteady at draught, restive, and given to jibbing when put to a hard pull—though this may arise in a great measure from their being badly broken in. We have many fine gig, carriage, and saddle horses, however, and even some that have pretensions to rank in the list

of racers. The Arabian stallion *Model*, imported from India, is sire of the finest horses we possess, having been long in the colony; but *Steeltrap* and *Bay Camerton*, imported from England, are fast approaching him, the proprietor of the latter having been netting 600*l.* per annum of late by this finely-formed animal.

Horses have risen full fifteen per cent since the turf club was established, and racing become a favourite Australian sport, 200*l.* having been given for a horse of high blood and good symmetry and action, and 150 guineas refused for *Modas*, the winner of the ladies' plate at the last Sydney races. No good saddle, gig, or cart-horse, can be had for less than 40*l.* at present, and mares bring proportionably higher prices, from their value as breeders. Five to ten pounds is charged for use of one of the best stallions, with the usual fee to the groom.

Our horses are remarkably hardy, and can undergo very great fatigue. They are generally badly broken in, and from this circumstance acquire many bad habits, which a proper course of training would enable them to avoid. The greatest fault in their symmetry is a heaviness

of head, while a considerable degree of obstinacy and sulkiness pervades their disposition—more, however, through the effects of education, than natural habit. They are very remarkable for their sagacity in recognising places where they have once been, and in finding their way home again if lost at a distance in the woods. I have myself more than once been indebted to this acuteness of perception for regaining home after being completely bewildered; and many friends of mine have likewise participated in the good effects of this quality. In case of losing yourself when on horseback, the best way is to lay the bridle loose upon the mane, when your trusty guide will be sure to carry you home by the most direct route. A friend of mine, who was in the habit of riding a good deal, found that whenever he approached a gully (which he was obliged to cross on his return), his sagacious bearer invariably opposed his wishes to cross at the particular spot he had been accustomed to, always endeavouring to lead off to another part of the gully where no passage was known to exist by his rider. Resolving to see whither the cunning rogue would go, he gave him the rein,

and soon found himself carried over the gully by a route he had never before followed; thinking still however that the old route was the nearest, he was curious enough to have both measured, when he found the horse's judgment correct, the difference amounting to several hundred yards.

From the high prices obtained for horses, it must be evident that the breeding them is a profitable concern in the colony; but as enclosed paddocks are required to keep them in, the new settler cannot turn his attention to this fertile source of income at the commencement, but must wait until more essential objects are accomplished.

The breeding of pigs is, however, a speculation on which he may at once enter, and an excellent one it is,—a good sow producing two litters annually —averaging seven or eight each—or at least fourteen pigs a year; which, at twelve months old, will, with the common range of the woods, net no less than 120*lbs.* each when killed, and considerably more if put up and fed. They are allowed to run about through the bush during the day, just giving each a cob of maize to bring it home in the evening, if not employing a man

to look after them. They feed on the grasses, herbs, wild roots, and native yams, on the margins of our rivers or marshy grounds, and also on the frogs, lizards, &c. which come in their way. They are usually fattened on Indian corn, given whole in the cob, which is far from an economical mode of appropriating that grain, but the difficulty and expense of shelling and cracking it, is the great bar to its being ground. Putting the cobs into a barrel to soak several days before giving them to the pigs, will, in a great measure, answer all the purposes of grinding, as the grain thus becomes soft, and is easier masticated and digested. It is a common saying among the Scotch housewives, that for every pound of salt you give a fatting pig, you have in return a pound of pork; and the herring salt is bought up in Scotland for this very purpose. The high price of salt here, however, prevents it either being applied as a manure or as a means of fattening or improving the health of stock. I observed once, on a farm a few miles from Sydney, where a large quantity of sea-ware had been collected for manure, that a herd of pigs which chanced to approach rushed forward in-

stinctively as it were among it, and devoured it in a most ravenous manner. The proprietor declared they had never tasted this ware before, and instinct therefore could alone have led them to it. Settlers living near places where these sea plants abound, might thus avail themselves usefully thereof. I had often heard it said among sailors, that pigs would fatten on coals, and although I had observed them very fond of munching up the coals and cinders that came in their way, still I conceived they might relish them more as a condiment or medicine than as food, till I was assured by a worthy friend of mine long in command of a ship, that he once knew of a pig being lost for several weeks in a vessel he commanded, and it was at last found to have tumbled into the coal-hole, and there lived all that period without a single morsel of any thing to feed upon but coals: on being dragged out, it was found as plump and fat as if it had been feasting on the most nutritious food. Another friend told me of a similar case, which came under his observation; and although these may be solitary instances, yet they serve at least to show the wonderful facility

which the stomachs of certain animals possess of adapting their digestive powers to such an extraordinary species of food, and extracting wholesome nourishment therefrom. When we consider coal however to be a *vegetable* production, containing the constituent principles of fat, carbon, hydrogen, and oxygen, our surprise will decrease.

Salt pork sells readily at 6*d.* per pound; it is the most profitable article with which you can supply your men, and also best relished by them, as they fry it along with their bread, and thus save all the fat, whereas that of the beef goes to waste. Four pounds of pork are substituted for seven pounds of beef per week, but many give four pounds and a half. Pork hams are made very good in the colony, but bacon has been little attended to; both articles fetching readily from 10*d.* to 1*s.* per pound, a price which gives great encouragement to the settler to turn his exertions toward this source of emolument.

Bacon was long considered by professional men as a heavy indigestible food; and when a country lout was seen eagerly devouring his three-inch fat bacon spread on his inch-thick bread, "What a

digester," it would be exclaimed, "must that fellow's stomach be!" Experience and observation however have refuted these notions, and proved good fat bacon to be at once among the most nutritious and easily digestible of our animal foods. Broiled bacon is therefore become, of late, a favourite recipe by most medical men in cases of deranged or weak digestion, and I know a lady who requires the gravy of beef or mutton to stand till cool, and then to have the fat skimmed off, before she can use it, (the smallest portion of beef or mutton fat deranging her stomach,)—to whom *fat bacon* never occasions any uneasiness.

Goats have been long introduced, and thrive amazingly in our barren scrubs, where few other animals can subsist; and I trust some enterprising individual will introduce the Cashmere goat, the hair of which is manufactured into such elegant and expensive shawls,—each goat furnishing about four or six ounces yearly of this valuable substance. There is nothing more to be desired than attempting the production of *all* valuable articles adapted to our climate, particularly such as no British possession has yet aimed at the growth of; because

in this way English subjects do not injure each other by rivalry, but on the contrary contribute to the greatness and wealth of the empire at large, making it independent of foreign supply.

Deer were many years ago imported from India, and now run wild through the county of Cumberland; but they do not appear to multiply, owing to their being shot and hunted down; and it is only by transporting them into the untenanted portions of country, (where they can have free scope to feed, breed, and roam,) that they can rank among those animals destined to furnish the sports of the field to our Australian squires.

Rabbits are bred about houses, but we have yet no wild ones in enclosures, although there is a good scope of sandy country on the sea-coast between Port Jackson and Botany Bay fit for little else than goat pasture and rabbit warrens; in which ways it may be profitably made use of, while at present it yields absolutely nothing.

Geese and ducks we have in great abundance, thriving well and breeding fast. Ducks live on the herbs, grass, insects, and slugs, which abound with us nearly all the year round, without a morsel

of house food, while a patch of clover suffices the geese when other resources fail. Turkeys, guinea-fowls, and poultry, are no less abundant and prolific, the first being more easily reared here than in England; the second being exceeding hardy, and absolutely inundating us with eggs; and the third falling little behind the former in all these particulars. The expenditure of a few bushels of maize annually among your poultry is not worth mentioning, as you grow it in such plenty; yet they generally require not even this from you,—the grasshoppers, flies, beetles, and grubs, in the summer; the red worms in spring and autumn; and the various native herbs and seeds in winter, sufficing to keep them in a plump healthy state: and as sustenance is so easily obtained, there are really no limits to their breeding; a friend of mine told me that he was actually obliged to send a basket of eggs among his workmen every now and then, to keep his stock under! Yet the breeding of poultry *for sale* is little attended to even near Sydney: so indolent are the great portion of our small settlers, that fowls fetch readily 3*s*. per cou-

ple in the market; eggs usually 1*s.* 3*d.* per dozen; and geese and ducks proportionably higher prices.

The turkeys and other poultry commonly roost upon trees in the vicinity of the houses,—our weather being so mild throughout the year as to cause them no injury, while they are found to keep freer from vermin when thus exposed than by accustoming them to a fowl-house. Eagles, hawks, and wild cats, are their only enemies; but none of these will venture very near a human habitation when once they are acquainted with the terrors of the musket, or with their dangerous and watchful enemies, the dogs.

LETTER XVII.

OUR wild animals are numerous, but few of them carnivorous, and none of a size to endanger human life. The *native dog* is generally believed to be an importation, being deficient of the false uterus or pouch characterizing all our other quadrupeds. He closely resembles the Chinese dog in form and appearance, being either of a reddish or dark colour, with shaggy hair, long bushy tail, prick ears, large head, and slightly tapering nose: in size he reminds one of a shepherd's dog;—running with considerable speed, and *snapping* in attack or defence. He does not bark, but howls in melancholy sort, when prowling in quest of prey, and has a strong and peculiar odour, which makes European dogs shy at first of attacking him,—doubtless intimidated, too, by his snapping mode

of fighting; for it is observed of poodles, and all which snap, that few other dogs are fond of engaging them. He is most destructive on breaking in among a flock of sheep, as he bites a piece out of every one he seizes; not *holding fast* and *worrying dead* like the fox, but *snapping* at all he can overtake, till twenty or thirty may be killed by one dog, there being something so peculiarly venomous in their bite that few recover from it. Their cross with the tame dog forms a very useful breed for emu-hunting, and many even of the pure ones are caught young, tamed by the natives, and bred up to hunt emus and kangaroos. They have as many pups as the tame dog, littering either in some hollow log, deserted ant-hill, hole in the ground, or thick brush. They will hunt, kill, and devour a tame dog, also, if a troop of them can catch him alone. A settler in the interior informed me, that while out hunting one morning, he observed his dog running direct toward him at full speed, with two large native dogs close at his heels; and so eager were they to seize their prey, that his own dog was actually sheltered between his legs, and the native dogs within pistol-shot, before they per-

ceived their danger. Hence he was enabled to shoot one of them.

The *native cat* is the only other carnivorous animal we possess; but its depredations extend no farther than the poultry-yard. It is small and long-bodied, with a long tail, claws like a common cat, a nose like a pig, striped down the sides with brown and black, and dotted over with white spots. It climbs trees and preys on birds while they sleep, being a night animal.

Our largest animals are the *kangaroos*, all of which are fine eating, being clear of fat except about the tail, tasting much like venison, and making most delicious stews and steaks, the favourite dish being what is called a *steamer*, composed of steaks and chopped tail, (with a few slices of salt pork,) stewed with a very small quantity of water for a couple of hours in a close vessel. We have the *forest kangaroo*, of a grey colour, with longish fur, inhabiting the forests; the *wallaroo*, of a blackish colour, with coarse shaggy fur, inhabiting the hills; and the *red kangaroo*, with smooth short close fur, of a reddish colour, (resembling considerably in fineness and texture the fur of the

sea otter,) inhabiting the open forests; and all of these varieties attain the weight of two hundred pounds and upwards, when full grown. The *wallabee* and *paddymalla* grow to about sixty pounds each, and inhabit the brushes and broken hilly country. The *rock kangaroo* is very small, living among the rockiest portions of the mountains; while the *kangaroo rat*, or more properly *rabbit*, is about the size of the smallest of the latter kind of animal, and lodges in hollow trees, hopping along like the other kangaroos with great speed, and affording good sport in the chase.

The kangaroos make no use of their short fore legs, except in grazing, when they rise upon them and their tail, bring their hind legs forward, and go nibbling upon all fours, pulling up occasionally some favourite plant with their fore paw, and sitting up bold and erect upon their hind houghs and tail, while they slowly bite and nibble it, shifting it from paw to paw like a boy protracting his repast on a juicy apple. When chased they hop upon their hind legs, bounding onwards at a most amazing rate, the tail wagging up and down as they leap, and serving them for a balance. They

will bound over gullies, and down declivities, the distance of thirty yards, and fly right over the tops of low brush-wood, so that in such places dogs stand very little chance with them; but, in a clear open country, soon tire them out. The dogs seize them generally by the hip, and throw them over; then fasten upon their throats, and finish them. But few dogs will attack a large kangaroo singly, some of the two hundred weight size often hopping off with three or four assailants hanging about them; and I was informed of one that actually carried a man to some distance. When a dog gets up close to a large kangaroo, it will often sit up on its tail and haunches, and fight the dog, turning adroitly round and round, (so as always to face him,) and pushing him off with the fore-paws: or it will seize and hug him like a bear, ripping him up with the long sharp claw on its powerful hind leg. They are constantly indeed cutting and often killing dogs with this terrible weapon, which will tear out the bowels at a single kick; and a large kangaroo is on this account very dangerous even for a man to approach, when set at bay. The kangaroo hunters

immediately hamstring them when thrown, to prevent injury to themselves or the dogs; while the black natives give them a heavy blow over the loins with their *waddie*, which completely paralyzes their hind legs, as all the large nerves supplying these parts pass out there.

The kangaroo has only one young at a time, which you may see attached by the mouth to the nipple inside the mother's pouch from the period it is the size of your thumb-top, and as bare and unshapely as a new-born mouse, until it attains the size of a poodle-dog, with a fine glossy coat of hair, ready to leap out and hop along after the mother. The young are attached by the mouth to the nipple in somewhat the same way as the placenta of other animals is attached to the uterus, the mouth being contracted round the nipple, which swells out like a cherry inside it, nourishing the fœtus by means of absorption through this indirect channel, the mouth and nipple adhering so strongly that it requires considerable force to separate them. When the fœtus arrives at sufficient age to suck, it drops off the nipple, and may then be said to be *born*, yet still continuing inside of the pouch, and suck-

ing milk now through the ducts of that same nipple, from the external surface of which it formerly derived a very different species of nourishment. The manner in which the young reach this pouch from the ovary, and attach themselves to the nipple, is still I believe a mystery, as no communicating duct has yet been found; but the natives assert they are born in the usual way, and that the mother places them there. It is amusing to see the young kangaroo pop its head out of the pouch, when the mother is grazing, and nibble too at the tender herbage which she is passing over. When hard hunted, the mother will stop suddenly, thrust her fore-paws into her pouch, drag out the young one and throw it away, that she may hop lighter along. They are always *very* hard pressed however before they thus sacrifice the life of their offspring, to save their own; and it is pitiful to see the tender sympathetic looks they will sometimes cast back at the poor little helpless creatures they have been forced to desert.—From this singular mode of gestation, you may handle the *fœtus in utero*, and pull it about by the tail, like a kitten, from the first moment of its appearance there, up

to the very day of its birth, without causing either pain or annoyance to it or its mother. Such is the very singular manner in which nearly *all* our Australian quadrupeds are generated and brought forth. When the young kangaroo has attained a considerable size, it will crawl out, feed about, and creep in again, to warm itself, or in case any danger approaches.—The kangaroos feed early in the morning when the dew is on the grass, which is the best time to hunt them.

If there is no dog in your pack that will show the game, you must keep sight of the dogs at full gallop to secure it, or else take out a little short-legged terrier, that will run the foot, and that you can readily keep sight of till it reaches the others, otherwise you may lose all your sport, as few of our dogs give tongue either in the chase or at the death. If there is a river or pond near, the kangaroos are sure to retreat thither when hard pressed, and in this way readily baffle the native dogs, by shoving under water and drowning such as may venture in beside them. From the great length of their hind legs and tail, they are enabled to stand on the firm bottom while the dogs are obliged to

swim, and in this way a fight between a large kangaroo and a pack of dogs affords a most amusing spectacle. The kangaroo stands gravely upright with his fore-paws spread out before him, wheeling round and round, to ward off his assailants, and whenever one arrives within reach, he pounces his paws upon him, and sousing him suddenly under, holds him fast in this position, gazing all the while around with the most solemn simpleton sort of aspect, heedless of the kicking and sprawling of his victim, whom he quickly puts an end to, if some courageous colleague does not in good time advance to aid, and force the kangaroo to let his half-drowned antagonist bob above water again, who paddles forthwith toward shore, shaking his ears and looking most piteously, with no inclination to venture in a second time notwithstanding all the halloos and cheerings with which you urge him.

Our *flying fox* is an immense bat, of such a horrific appearance, that no wonder one of Cook's honest tars should take it for the devil, when encountering it in the woods,—and bound breathless back to the boat incapable from terror of giving a

more particular description of the *brimstone brat* he had come *athwart hawse* of, except its being "about the size of a one-gallon keg."

We have grey ring-tailed *opossums*, which, in jumping from branch to branch, twist their tail round the one they leap from, and give themselves a swing toward the other;—and also white flying opossums, with a web like like a bat's wing stretched between their fore and hind feet, to answer the purpose of wings in springing from tree to tree. The *flying squirrels* are of a beautiful slate colour, with a fur so fine that, although a small animal, the hatters here give a quarter dollar for every skin. The *bandicoot* is about four times the size of a rat, without a tail, and burrows in the ground or in hollow trees. The opossums and squirrels are good eating, having much of the taste and flavour of a rabbit, but require to be soaked in water some time previously, to take away the strong aromatic odour of the gum-tree-leaves on which they feed. The bandicoot tastes somewhat like a sucking-pig, and makes a delicious dish with a well-prepared pudding in its belly.

All these are night animals, and the settlers

hunt them in the fine moonlight evenings when they come out to feed. The dogs chase the opossums and squirrels till they run up a tree, at the bottom of which they stand and bark, when the sportsman either knocks them down with a stick, cuts down the tree, or shoots them with a musket having a bright or chalked barrel, to enable him to take a better aim. The bandicoots and kangaroo-rats are cut out of the hollow tree they may run into, or dug out of the ground if taking refuge there. In this way you may return home after a few hours' pastime loaded with a dozen opossums, squirrels, bandicoots, kangaroo-rats, and native cats, if the forest has not been previously much hunted in.

Our *coola* (sloth or native bear) is about the size of an ordinary poodle dog, with shaggy, dirty-coloured fur, no tail, and claws and feet like a bear, of which it forms a tolerable miniature. It climbs trees readily, and feeds upon their leaves, getting very fat and unwieldy, the flesh being much esteemed by the natives. Our *porcupine*, or Australian hedgehog, serves for another native dish, as well as the *wombat*, a large animal of the

size of a mastiff, burrowing in the ground, feeding on grass and roots, and attaining considerable fatness. *Native rats* and *mice* are very numerous, and differ little from those in England, the rats having shorter bodies and tails, living near to rivers, and playing sad work in every hut they get into, from the quantity of earth they throw out in burrowing.

We have *eagles* of large size and varied plumage, but chiefly dark-coloured, with white heads. *Hawks* of all sizes and colours too,—one, however, particularly noted, being of a beautiful milk-white with reddish eyes. The eagles prey upon the emus and other large birds, and also upon the small kangaroos. The *emus* often stand nearly as high as a man, their legs and neck being long, and their body unwieldy. They have neither feathers nor wings, but are covered with something between hair and feathers, with short flaps at their sides like miniature wings. Of course, therefore, they can only run, and are coursed by dogs in the same way as kangaroos. Dogs however will seldom attack them, or even eat a portion of their flesh after killing them, there being some odour

about it which often makes that animal sick; while they kick out so powerfully as to drive a dog heels over head, and often kill or seriously injure him at a single blow. The settlers even assert, that they will break the small bone of a man's leg by this sort of kick,—which to avoid, the well-trained dogs run up abreast, and make a sudden spring at their neck, whereby they are quickly despatched. They run so amazingly fast, that it requires a fleet dog to overtake them. The first flock I ever hunted consisted of five, which had evidently never seen a white man on horseback before, from the degree of amazement with which they stared at me. I was mounted on a swift blood mare, and kept her at a hand-gallop after them, but they left me always with the most perfect ease. On approaching them first, they discontinued feeding, and gazed stedfastly at me until I was within a quarter of a mile, when they wheeled suddenly round, stretched out their long necks, and made a *spout* to the top of a rising ground half a mile onwards, before I could well put the mare to her speed. There they stood staring again at me, till I was within the same

distance as before, when off they again started, while I pushed on, making sure to be at the top of the hill by the time they were at the bottom of it; but on reaching the top, no emu was to be seen, till, looking half a mile onward, there they were upon the top of another rising hill, staring at the horse and me with the same provoking solemnity; and in this way I was tantalized for near an hour.

There is but little fit for culinary use upon any part of the emu except the hind-quarters, which are of such dimensions, that the shouldering of the two hind legs homewards for a mile distance, once proved to me as tiresome a task as I ever recollect to have encountered in the colony. The flesh is like beef, both in appearance and taste, and is good and sweet eating: nothing indeed can be more delicate than the flesh of the young ones. At particular periods of the year the emus are bedded round the rump with a prodigious quantity of fat, which is melted down and much esteemed by the settlers. They lay six or seven eggs often at a time, which are equal in size to those of an ostrich, and of a beautiful dark-green colour. The

shell is very strong, and may be converted into a good drinking-cup; while the yolk and white may be mixed up into excellent pancakes. The natives in fact almost live upon emu eggs during the hatching season. Like the kangaroos, these birds recede and decrease as population advances; and, like the wolf and wild boar of England, may be possibly spoken of hereafter in our Australian clime as part and parcel of traditionary history.

Our *wild turkeys* are about the size of tame ones, and consist of two varieties, the dusky and the blue-feathered. They reside chiefly in open forests and on bare plains, like the English bustard, and are shy of approach; they lay one egg at a time; and are excellent eating. We have cranes, ~~two~~, or *native companions*, *curlews*, *snipes*, and *quails*; the last-mentioned being our substitute for the partridge, to which, although smaller, they are far superior as a table dish. We have a large pigeon named the *wanga-wanga*, of the size and appearance of the ringdove, which is exquisite eating also:—besides two varieties of our beautiful *bronze winged pigeons*, the *crested pigeon* of Illawarra, and the *large green pigeon* of Port

Macquarie. But indeed our birds vary in every hundred miles of latitude, and these are but a small portion of our pigeon tribes. We have *crows*, resembling in look and hoarse croaking note the English ravens, and feeding promiscuously on corn or carrion;—*magpies* of three varieties, one closely resembling the European, but differing therefrom in being gregarious, and a bird of song too, often collecting together during the fine calm evenings upon the low branches of some spreading tree, and trilling forth in mournful chorus their low, mellow, melancholy notes. Our *mountain pheasant*, also, is not only a bird of song, but an exquisite mocking-bird besides. He perches himself in the middle of some thick brush, and picking up carefully all the grass, scratches and raises a square bed of soft mould for himself, like a small hotbed, on which he squats and amuses his leisure time with imitating the notes of all the birds, and the calls of all the quadrupeds of the forest, from the howl of the native dog, to the discordant clack of the black native. We have *black swans, wild geese*, and *ducks*, in great variety; the *wood-duck* bringing forth its young in the woods and perch-

ing upon a tree like a pigeon. We have four varieties of *cockatoos*, namely two large black species, like small eagles, without crests, having yellow spotted wings and yellow streaks across the tail; together with the red-crested slate-coloured cockatoo and the yellow-crested white one. The latter are great pests to the farmer, for there is no surprising them when once they are acquainted with fire-arms, as while the flock proceeds to plunder they station a sentinel upon the top of a neighbouring tree, who by the variation of his screams denotes to his companions the enemy's progressive approach, till his taking to wing warns them to be off also. They rip up the maize-cobs with their strong hooked beaks, and destroy ten times more than they consume. They are all good eating when young, but tough when old.

Our parrot-tribes are of infinite variety, and exceed all others in the world in the splendour of their plumage. The *king parrot*, with his bright green body and red head and neck; the little *rosehill* with his red head, yellow breast, and tastefully mottled plumage; the *blue-mountain* decked out in all the colours of the rainbow; and the *llery*

with his beautiful deep red and blue feathery garnishings,—each of which kind is so much prized in England,—may be seen here almost invading our very doors in fruit-time, and defying us to drive them away! They are caught in great abundance by means of traps in seed-time, and in that state, or when newly taken from the nest, are sold in the market at about sixpence apiece. They are often made into pies, and I have heard of them selling at a shilling a dozen for this purpose. All these four varieties learn to talk well, while the rosehill becomes likewise a very pretty whistler of tunes, when taught early. The magpie, too, is a powerful and harmonious whistler. One belonging to Captain Piper might be heard half a mile down the harbour in a still day, jerking out *Paddy Carey* in the most spirited manner. We have a considerable variety of pretty little *parroquets* too, which fly about in chirping flocks, creeping up the branches of our stately forest-trees, and fluttering from bough to bough, with their lively green plumage shining in the sun, in every variety of glossy tint.

It would be tedious to enumerate the vast variety

of other birds which adorn and enliven our endless forests; but the *regent* and *rifle-bird* outvie all I have seen from any part of the world, in the chaste splendour of their plumage. I cannot omit to notice likewise the *ornithoryncus*, that remarkable animal which forms the link between the bird and beast, having a bill like a duck and paws webbed similar to that bird, but legs and body like those of a quadruped, covered with thick coarse hair, with a broad tail to steer by. It abounds in our rivers, and may be seen bobbing to the top every now and then, to breathe, like a seal, then diving again in quest of its prey. It is believed to lay eggs, as a nest with eggs in it of a peculiar appearance was some time ago found. It bears a claw on the inside of its foot, having a tube therein, through which it emits a poisonous fluid into the wounds which the claw inflicts; as, when assailed, it strikes its paws together, and fastens upon its enemy like a crab. We have also a curious animal called the *musk-duck*, smelling strongly of that substance, which inhabits rivers, and has neither wings nor feathers, but a species of quills like the penguin.

I have often thought how easy it would be to

introduce many of the wild animals of this country into England, and those of England here. How many *transportations* of this kind have been performed, both as regards birds and plants! The peacock and turkey England owes to a country hotter than this. Our rosehills inhabit a region quite as cold as the south of England, while the Macquarie parrot is the inmate of an island even more bleak and cold than the Orkneys. How delightful would it not be to see our beautiful little rosehill parrots hopping and chirping about your shrubberies, displaying a plumage which Raphael himself might vainly attempt to rival! It would only be necessary to import a few cagefuls of wild ones, retaining them in a large aviary till they put their feathers in order, and giving them a little corn during the first winter or two, till they found food for themselves. In a *Morning Herald* of November 1826, there is an account given of two rosehills flying wild about at Gourock in Scotland, one of which was shot by a Mr. Muirhead: and as these two birds were found thriving so well in a Scotch November, what could possibly prevent them from living and breeding in the southern

counties of England? I hope yet to see the experiment tried, and I trust our patriotic Australian company will set the judicious example; and while they delight *you* with an importation of our gaudy chatterers, enliven us at the same time with a band of your English choristers, that we also may sing of our

"goldfinch and linnet
"Warbling from each spray;"

have the lark to cheer us with his matin song, as we proceed to our early toil, and listen enraptured to the thrilling quavers of the thrush, or the deep and melodious tones of the blackbird, on our evening return.

A number of individuals in Sydney earn a good livelihood by collecting our beasts, birds, and insects; stuffing, preparing, and arranging them in cases; and disposing of them to individuals leaving the colony. A considerable number of prepared bird-skins are also disposed of in this way, their feathers being used in the manufacture of artificial flowers.

LETTER XVIII.

A VAST variety of fish teem in our rivers, but the *perch* is the species oftenest put into requisition by the settler on this side the Blue mountains, and the river cod, in the country beyond. The Australian perch resemble however the English perch only in appearance; they abound every where in our eastern coast rivers, and although covered with scales and prickly fins, and of the same shape as the English perch, yet they are not more bony than a trout, while in flavour, juiciness, and delicacy of eating, they bear a close analogy to the sole. The perch are caught with bait or fly, the red worm answering best in spring, and the grasshopper, or locust, during summer. They often take best after dark, but are as capricious as those in England. I have caught as many in less

than an hour in Hunter's River as made both my arms ache in carrying homewards but a short quarter of a mile; and during the early part of the spring I often fed the dogs therewith, while the farm servants feasted upon them throughout the greater portion of the year.

You can scarcely miss taking home a dozen pounds of *eels* after an hour's fishing, at the setting-in of a fine night, many weighing *singly* that number of pounds. The *Bathurst cod* have been caught of the weight of seventy pounds, but those of thirty pounds weight are very common. They are a most delicious fish too, and voracious for bait; but as one of moderate size will always suffice you at a time, you have never to troll long ere you have something better than a "glorious nibble" to boast of on returning.

We have fresh-water *shrimps*, and *muscles* also, in great numbers, in some of our rivers and ponds; muscles having been found at Bathurst, it is said, six inches long and three and a half broad. They are feasted on by the natives, and also by some animal that dives, drags them to the pond side, breaks their shells and devours them, (like

the American musk rat,) as you constantly see small piles of shells scattered about the edges of our lagoons similar to what are observed in the American rivers.

Our *guanas* are generally of a dirty brown colour, and seldom exceed four feet long. Like their smaller species, the *lizards*, they become torpid in winter, during which time you will often see them lying about in your path as if dead, becoming in this state a fine prize to the natives, who quickly pick them up by the tail and have them half roasted before they recover from their sleepy state, their flesh being considered a great dainty. They climb trees and prey upon the young birds, while mice and other vermin prove also an acceptable repast. A friend of mine who had a favorite *jackass*, which he was training up to *whistle*, was aroused by his piteous screams one morning at the back of the house, and on running out, just arrived in time to witness his tail-feathers wagging down the throat of a guana. Another friend had actually a sheep killed by one; at least, so *swore* the shepherd. It had been hamstrung by a native dog, and was often forced to crouch

down to rest, in which position it was attacked. The man found it at its last gasp, with the guana fastened on its throat, which he quickly put an end to by means of a good stick and a trusty dog to boot. There was the dead sheep with its mangled throat, and the dead guana too, so we *could not* but believe the man.

Lizards are very numerous, but few of them handsome; they afford a ready meal for the small hawks and other birds of prey. Our *frogs* are of a beautiful dull green, with yellow stripes down the back, and dotted over with black. They climb trees and often crawl into our rooms, creeping up the curtains of the bed, or up the window-sill or corner of the room until they are perched against the very ceiling, which they readily accomplish by their web-feet adhering like suckers to the substances they apply them to, in the same way as the feet of the fly. It is no unusual thing to hear one of these croaking visitors hail you in the morning as soon as you awake with his hoarse note.

Our *snakes* are very numerous, and all except the *diamond snake* believed to be poisonous, this being the only one eaten by the natives. The

diamond snake sometimes grows to the length of fourteen feet, but few of the others exceed four. (Large snakes, as, for instance, the boa, may generally be set down indeed as not poisonous.) All our other varieties, however, are reputed by the natives as highly venomous, and as far as colonial experience goes, the fact is confirmed. Our two most venomous snakes, the brown and black, appear to me to be male and female, as I have twice met them lying very suspiciously coiled up together. On one of these occasions, they darted simultaneously into the same hole, and wedged themselves so completely on their thickening middles coming in contact at the narrow entrance, that there they stuck in durance vile with their long whip-tails whisking about in eager endeavour to force an admission. This enabled me to seize them jointly by these slippery members, and pound out their bowels with the end of a stick; but, although I exerted some considerable force, I could not pull them out to finish them. This, it is true, I might have done by putting my strength fairly forth, but in fact I had no great anxiety to disengage them from their bondage.

The second time I saw these kind of snakes again together, I had two dogs with me that had acquired the dangerous habit of snake-killing—one being a fine pointer newly from England, and the other a colonial-bred kangaroo dog. The pointer seized the black snake first, and was shaking it briskly about, when the brown snake, which had retreated some six feet distant, suddenly raised its head, darted its long tongue two or three times out, its eyes meanwhile sparkling vividly, then made a sudden rush at the dog, coiling round his legs and biting at him with the greatest fury imaginable. I ran forward to assist with a spade, but before I got up, the dog dropped the black snake and seized the brown, snapping it up into mouthfuls. To make sure, I chopped the head off the black snake, leaving a bare inch of the neck attached, and then performed the same operation on the brown. On turning, I observed the kangaroo dog behind me make a sudden spring and look anxiously round to where his hind feet had stood, where lay the head of the black snake, which I thought had merely startled him by his treading upon it, little deeming that it

could injure him in that mangled state. The pointer I had set down as dead, but, after a few minutes' space, I conceived hopes of his safety from his running briskly off on the scent of an emu. My attention, however, was soon attracted to the kangaroo dog, by his suddenly losing the power of his hind quarters, which incapacity quickly extending to his fore quarters also, made him tumble down as if in a fit. Conceiving it to be something of this kind, I cut his ears with a knife, which brought him a little round, but he could not rise, and lay panting with his tongue lolling out, and his eyes dim, watery, and glassy. In little more than half an hour from the time I saw him start from the snake's head, he was dead, and his body swelling fast. I now bethought myself of that circumstance, and immediately gave up all hopes of the pointer, who was now out of sight, and whom I found dead, swollen, and putrid, a few days after, within a short distance of the field toward which I was at the time walking.

These snakes are cowardly creatures, and always fly the face of man, so that it is only by accidentally trampling upon them, or in picking up

fire-wood, that people are bitten; comparatively few deaths having taken place from this cause since the foundation of the colony. A numbness is first felt in the bitten part, which proceeds up through the limb, gradually affecting the whole body, and producing drowsiness, stupor, and delirium. The native remedy is that practised in all countries, namely, tying a tight ligature above the part, and scarifying and sucking the wound. All nations have been naturally taught to pursue this plan as in the course we instinctively follow when we hurt a finger—grasping the wrist firmly with the other hand and slipping the finger quickly into the mouth to lull the pain and irritation. The bitten part is always immediately cut out by the whites, and chewed herbs applied to the wound, if no medical man is near. Next to suction, this is the best plan that can be adopted, as the potash and mucilaginous juices in the herbs and saliva neutralize or blunt the acrimony of the poison, and materially assist the cure. From death so suddenly supervening, it is obvious that it is through the medium of the nervous system the poison makes its attacks, and we see a proof of

this in the various remedies made use of being chiefly of the species denominated nervous, such as camphor, ammonia, and the like. I have only heard of one man who died after the piece was cut out and proper remedies applied, and there might be something peculiar in this individual's case.

The snakes are chiefly found in open bare spaces, where they can bask in the sun; hence our treeless plains are pretty well tenanted with them. It is probable that, like other animals, the species of snakes will vary with material changes of latitude. The rattlesnake is only found in a small portion of Upper Canada, for instance, none extending farther north than Burlington heights. Its poison, however, is not near so virulent as that of our snakes, as may be expected from its greater size, since, generally speaking, the venomous qualities of snakes increase in proportion as their size diminishes, an arrangement wisely provided by nature to enable such as are wanting in strength otherwise to secure their prey. The small green snakes of Martinique that nestle among the coffee-leaves, not much larger than earth-worms, are the most deadly there, while I never heard of an animal

being killed in the back settlements of America, where I resided, from the bite of the rattlesnake, although I knew of several being so bitten.

There is a man in this colony named Wilkinson, well known by the appellation of the "snake man," who has become so familiar with, and fond of, these reptiles, that he seldom travels without having some of the most venomous coiled in his bare bosom, or stuffed into the crown of his hat. While in the service of a Paramatta clergyman, he came home one day with the tail of a good-sized snake hanging out from under his hat, curling over his brow like a love-lock, and when told of it by the lady of the house, he very coolly gave the tail a sharp pinch between his finger and thumb, to make the animal draw its stray member in. He had some constantly crawling about his bed-room, too, and often occupying a portion even of his bed, without his expressing the least apprehension. He says he was taught by the French surgeon of De Freycinet's ship to tame these reptiles, which he accomplishes by simply confining several in a bag together; through which procedure, the snakes soon lose all inclination for biting, permit-

ing themselves afterwards to be finely handled as he has often demonstrated by throwing his hand among a bagful of them and holding them fearlessly up like a bunch of eels. Whatever be his mode of taming, however, it is certainly most effectual. He at first approaches them cautiously from behind, as they lie basking, seizes them close by the head, passes the thumb under the jaw, forthwith consigns them to his wallet, and trudges eagerly on in search of more: and though he has caught some thousands, he has never been once bitten. The venomous teeth appear to be concealed in a sheath, as I have never been able to see them, whilst the hollow teeth of the rattlesnake you can discover at the first glance.—Our *deaf adder* resembles, in its short, puffy, repulsive appearance, the blow-adder of America. It is a most dangerous animal, as, from its stupidity, (probably not hearing you approach,) it seldom moves out of the way like the others, and if there is a foot-path near, it is sure to be stretched along it. It is thick and short, swelling out in the middle, with a flat head and a cleft tail, which it opens and shuts like a pair of forceps, and which,

the natives say, contains a sting. It is beautifully variegated on the back with rows of red and white specks, and seizes the stick with which you tease it as viciously as any cur. We have also a small hazel-coloured snake, very oddly formed, with two little flaps at its sides like fins, which darts along with great rapidity, and is denominated the *winged snake.*

Butterflies abound with us in vast variety and numbers, many of them most beautifully mottled in all manner of hues. *Moths* too, equally numerous and handsome, are seen fluttering about in our warm summer evenings, some of them vieing in size with the humming bird. The moth which produces our destructive caterpillar is a smallish brown one; and the *wheat-moth,* so annoying to the farmer, of a similar colour, and smaller still. The best antidote against the wheat-moth is our wild mint, or some other strong *aromatic,* strewed among the wheat,—no moths being able to live where any substance of this description abounds. Our *wild bees* are shaped like the European bee, but are little larger than a blow-fly, and without a sting. They hive in hollow trees, and produce very

fine honey and wax, which is much sought after by the natives. We have also solitary bees and solitary *wasps*, but I know not if they possess stings. European bees were introduced some years ago, but falling into careless hands, little attention was paid to them for awhile. Lately, however, some swarms have been obtained by a careful individual, and we may soon hope to see the colony stocked with them. A number of the swarms have escaped at different times into the woods, where they will doubtless breed fast, and wild wax and honey may hereafter become common; indeed, the country and climate being exceedingly favourable for bees, we may hope to see such products added another day to the list of our exports. It is feared by some, that being able to procure honey all the year round, they may cease hiving, and become solitary; but in this apprehension I do not participate; for no animal, naturally gregarious, ever, I believe, becomes otherwise.

Mosquitoes are only found in brushy places upon the coast, the clear interior country being quite destitute of such annoyances; and after all, I do not think they are much worse with us than the

English gnat, or so teasing as the northern midge. They have always been common at Paramatta, but never made their appearance in Sydney till within these three years, since which the blow-flies have nearly vanished; and indeed wherever mosquitoes abound, I have observed there were few blow-flies, and *vice versa;* so that the existence of the two simultaneously seems to be incompatible. The bite of the mosquitoe is annoying almost solely to new-comers, as when once you have been habituated thereto, it very rarely produces swelling, which would seem to evince that the deleterious effect of all animal poisons is lessened on repetition, like the poison of small-pox, measles, &c. The South-Sea islanders clear their cabins of mosquitoes at night in a very simple way. They dim the light of their lamp by holding a calabash over it, and walk two or three times slowly round the room with it in their hand. The mosquitoes collect quickly about the light, when the bearer thereof slips gently out of doors, puffs out the lamp, and jumps back into the apartment, shutting quickly the door after him, and leaving thus all the troublesome guests on the outside.—The *blow-*

flies are a terrible pest, resembling closely in appearance those of England, and are so determined on mischief that they will blow an animal as soon as killed, nay even the very beef roasting on the spit or smoking on the table, their progeny of course dying in hot torments in the latter instances as soon as spawned. If the meat gets quickly dry, they can do no mischief; but maggoty meat is not depreciated here, inasmuch as it by no means follows that it is bad. They will even blow the milk, in which they are drowned, and the very blankets on the beds, but their offspring die in these cases too. I shall never forget the alarm I was put into one morning, on observing a blow-fly buzzing from among the blankets beside me, and afterwards witnessing the nests of young maggots, which on inspection I found stirring in the down of the blanket. I instinctively hurried over my own person and habiliments, thinking I must undoubtedly be *maggoty* too, and that some terrible disease must be impending over me, which drew these forerunners of corruption about my person. I was actually ashamed to mention the circumstance, but having the curiosity to examine a friend's blankets

in a neighbouring room, my heart was a good deal lightened on finding them in a similar state; and on inquiry my fears were set altogether at rest. It is singular that they never blow the sheep even when cut by the shears, (except the place festers,) a circumstance owing no doubt to the air drying up the wound so quickly; neither do they blow into the wool, like the English flies.

Our *gadflies* are often as large as tame bees, and are a terrible annoyance to the flocks and cattle when they come down among them; but it is only occasionally during the early part of the summer that I have seen them. They will extract nearly as much blood as a small leech at a single operation. *Fleas* are a great nuisance here also, as in all warm climates, but a little care and cleanliness will keep them under. They are seen hopping about the ground near the house in summer, breeding readily among the warm dust. The settlers clear their blankets very expeditiously, by simply spreading them out beside an ant-hill, when the ants quickly run over this fertile field for prey, and worry and nick off to their nests every flea they come athwart. I have seen here

the terrible English *turnip-fly* upon a patch of turnips sown on new land at least twenty miles from where any such vegetable had grown before. The seed was brought from England, and there could have been no such insect at this place previously. Indeed, all our Australian animals differing from those of other countries, it is very evident that it must have been generated by the ova attached to the seed.

We have abundance of *grasshoppers* during summer; as also large flies named *locusts*, which make a loud clattering noise with their wings when congregated in flocks upon the trees;—chirruping *crickets*, too; and an animal named the *turtle insect*, infesting fruit-trees and covering them with its black exuvia. The ants flock to such trees to feast on the eggs of this insect, which ultimately destroys the tree, if steps are not quickly taken to check it. It lies close upon the leaf, like a small scale. We have abundance of *spiders*, likewise, both small and pretty, and large, hairy, and ugly. The webs of some in the woods are exceedingly strong, much resembling silk; and if in darting through the brush, you chance to break a bundle

of their connecting fibres across your nose, you are glad to whip your hand up and give it a soothing rub, to lull the sharpness of the tingling. Our red *earth-worms* are similar to yours, as are also our *slugs*, a small species of the latter absolutely destroying some of our gardens; the use of salt as a manure to extirpate them having not yet come into use here, as among your London gardeners. Our *wood-grub* is a long soft thick worm, much relished by the natives, who have a wonderful tact in knowing what part of the tree to dig into for it, when they quickly pull it out and gobble it up with as much relish as an English epicure would an oyster. These grubs destroy a tree with amazing rapidity, the acacia being most liable to their attacks; and I have seen one of those trees green and flourishing to-night, and withering in a day or two after,—the trunk and grass around the root being covered with sawdust, which the grub had thrown out at port-holes here and there in his drilling progress through the wood. We have, likewise, a great variety and abundance of *ants*, some very large, and inflicting a bite as painful as the sting of a wasp: one variety builds huts of earth of a py-

ramidal form, glued together so as to resist the wet, as high and round often as an ordinary hay-cock. To many of the hills inhabited by the other species of ants, roads are paddled for the distance often of a hundred yards, broader than sheep-walks, and freer of herbage too. It is extraordinary the numbers of the black ones that will often swarm out from the rotten logs wherein they are bred. I have seen a swarm of these fliers extending two hundred yards, as thick as a bee-swarm: and although I waited more than a quarter of an hour at the log, they continued to issue out of it as numerous as ever, all taking flight in one direction. The white ant is a sickly-looking colourless animal, like all other living things which never see the light. It is exceedingly destructive to all our woods, except the pines and such as possess a strong aromatic principle in their fibre. I observed once, in a house floored with Newcastle pine, upon gum sleepers, that the latter were entirely destroyed, while the former remained untouched. Mineral tar soaked well into our woods would no doubt prove an antidote against this destructive insect, as I have observed that

common white-lead paint was a bar to its penetration. A friend was one evening sitting in a veranda, leaning against one of the wooden pillars which supported it, when his head slipped right *into* the post; and on examination, the white ants were found to have eaten out nearly the whole wood, leaving however the shell of white paint on the surface without a mark upon it, having got in at the top and devoured their way down. In passing from one tree to another, they build an archway of earth cemented together, to protect them from the sun and weather in their route, light appearing to be very disagreeable if not fatal to them. Their ravages are often extensively seen in the hearts of our forest-trees, when coming under the feller's axe.—There appears to be some musk insect in this country, as, in passing through the woods, I have often perceived a powerful musk smell wafted from trees by which I had walked before without observing any such odour.

The *caterpillars* are a much-dreaded enemy with us, and hang as a night-mare over the hopes of the farmer. It is only at intervals, however, of many years that their ravages are

extensively destructive; but, on the other hand, the colony is seldom *totally* clear of them throughout a summer, though their appearance is only in patches here and there, too insignificant to attract particular observation. It is after a mild winter succeeding a summer when the parent moths have been unusually plentiful, that they have come in such dread battalions;—yet it is curious that one portion of the county of Cumberland may be overrun by them, while the adjoining portions will not be visited by even a solitary caterpillar. Their appearance is sometimes so sudden and so numerous, that many of the country people believe firmly they are brought by the winds. An individual once declared to me, that on walking out before sunrise on a foggy morning, the wind being westerly, he found the fields, hedges, and fences around swarming with them, though he had not observed a single one the previous night, while his hat and clothes were *covered* in a three hundred yards' walk. I thought at first they might have been blown from trees in the vicinity upon him, but on examining the place, I found this to be impossible. They most likely sprang upon him from the ground

as he paced along. It is puzzling how they should appear simultaneously and in such numbers upon isolated spots. They do not spread widely over the field, but proceed in a compact line often several inches wide and deep, huddling over each other like a hive of bees. This line is stretched irregularly across the field, the progress of their ravages being seen waving in and out, upon the edge of the unscathed portion, like the irregular ravages of a fire. Not a green blade is to be seen behind them, except those of the solitary herbs, rib-grass, and the like, which they avoid, the field being bedded with their fetid excrement, and forming a dismal, desert-looking contrast to the flourishing pasture in advance of them. The commencement of spring is the period of their visit, and although they send but few pioneers *before*, yet *behind* there are generally stragglers. In crossing a stream, they proceed to some point of land projecting into it above where there is a bend, and dropping into the water, are floated to the opposite side, at some distance below. So close and so massive is often their advancing line, that you may tread several hundreds to death by

a single stamp of your foot. No attempt has been hitherto made to destroy them or check their ravages, but the settler sits quietly down, rubs his hands, and whiningly laments the ruin impending over his fair prospects!—in this particular resembling a torpid Canadian backwoodsman of my acquaintance, who would sit starving at home, winter and summer, toasting his shins over the fire or chipping away at a stick, and bemoaning "the dismal hard times:" yet this man had a fine farm, which, with a few hours' daily labour, would have furnished him with every necessary of life. So it is with our settlers, who seem to think any attempt at the destruction of their invaders so absolutely unavailing, that I once witnessed a field of barley worth 40*l.* at least completely devoured, though I am certain the exertions of one man, for a single day, with a pair of thick-soled shoes, would have almost annihilated the whole host—so compactly did they lie together. Their destruction in some way or other certainly deserves most serious attention:—when they attack the corn crops, it is, I conceive, perfectly practicable, while on the pastures it might be *attempted* in some way with at least a *prospect*

of success. When we consider that the whole year's corn crop may be annihilated by them, and the pasture not only destroyed for one year, but rendered in a manner unproductive for several succeeding, I think, that even if the whole of a farm establishment were employed, not only for *days*, but for *weeks*, in extirpating them by personal exertion, large sums would eventually be saved. Besides, as salt is destructive to grubs, slugs, and worms, it would doubtless also destroy caterpillars; and therefore the most *expeditious* method in reference to your crops and valuable artificial grass-fields, would be to deluge the line of caterpillars in strong brine from a watering-pan. The Rev. Mr. Cartwright, of Tunbridge, who applied a solution of one pound of salt in a gallon of water as an effective remedy for the mildew in his wheat crops, found that two men could go over nearly four acres daily—one watering, and the other applying the brine equally over the wheat with a painter's brush; but as no brush would be required in the case of the caterpillars, the labour of this man would be saved; neither would the person employed be required to water the whole field, but only a small